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SITE ASSESSMENT REPORT
GARY DEVELOPMENT LANDFILL
GARY, LAKE COUNTY, INDIANA



Tetra Tech EM Inc.

**SITE ASSESSMENT REPORT
GARY DEVELOPMENT LANDFILL
GARY, LAKE COUNTY, INDIANA**

Prepared for

**U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 5 Emergency Response Branch
77 West Jackson Boulevard
Chicago, IL 60604**

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1.0 INTRODUCTION

The Tetra Tech EM Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) was tasked by the U.S. Environmental Protection Agency (U.S. EPA), under Technical Direction Document (TDD) No. S05-0201-005, to perform emergency response activities followed by a site assessment for the Gary Development Landfill (GDL) site in Gary, Lake County, Indiana. For the site assessment, START was assigned to compile available site information, perform a site inspection, collect samples, procure an analytical laboratory, provide photographic documentation of site conditions, provide a written log documenting all on-site activities, evaluate potential threats to human health and the environment, and prepare this site assessment report.

The site assessment was performed in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40 of the *Code of Federal Regulations* (CFR), Section 300.415(b)(2), to evaluate site conditions and possible threats to human health, public welfare, and the environment. This report discusses site background information, emergency response and site assessment activities, sample analytical results, potential site-related threats, the removal cost projection for remediating the GDL site, and includes a summary of the assessment. In addition, Appendix A contains a photographic log of site features, Appendix B contains a data validation report and validated analytical results for site samples collected by START, Appendix C contains cost estimates for the removal actions to remediate the GDL site, and Appendix D provides a list of witnesses of the site assessment.



2.0 SITE BACKGROUND

This section provides information regarding the description and history of the GDL site.

2.1 SITE DESCRIPTION

The GDL site is located at 479 North Cline Avenue in Gary, Lake County, Indiana (western 1/2 of the southwest 1/4 of Section 35, Township 37N, Range 9W)(see Figure 1). The site is a former Gary Development Company facility that includes four abandoned buildings totaling approximately 8,000 square feet, the landfill, and a lagoon situated on the northeast side of the landfill. The site is north of and immediately adjacent to the Grand Calumet River. The area surrounding the site is primarily industrial and commercial. The East Chicago Central Service Facility is located approximately 0.5 mile west of the site. A scrap steel and aluminum recycler is located immediately west of the site. Public access to the site is limited by means of a chain link fence, though signs of trespassing were evident. Figure 2 shows the site layout. The lagoon is known to contain at least 10 to 12 drums and an excavator. The lagoon is a former borrow pit area that has since filled with water. The depth of the water is estimated at approximately 20 feet deep.

2.2 SITE HISTORY

The Gary Development Company operated a nonhazardous landfill until 1988. Although the landfill reportedly operated as a sanitary landfill accepting only commercial and municipal wastes, in 1986 U.S. EPA alleged that the Gary Development Company had operated illegally by accepting hazardous wastes at the landfill. In April 1996, a U.S. EPA administrative law judge concluded that Gary Development Company had accepted hazardous wastes at the landfill and ordered the company to comply with Resource Conservation and Recovery Act (RCRA) closure procedures, post-closure maintenance, and groundwater monitoring requirements at the landfill.

The Indiana Department of Environmental Management (IDEM) continued to conduct periodic inspections at the site and identified several drums at the site on 08 Jan 02. Two of the drums on the south apron of one of the buildings appeared to be leaking. IDEM notified U.S. EPA of the situation on 08 Jan 02 and asked for assistance in stabilizing the drums and performing a site assessment.





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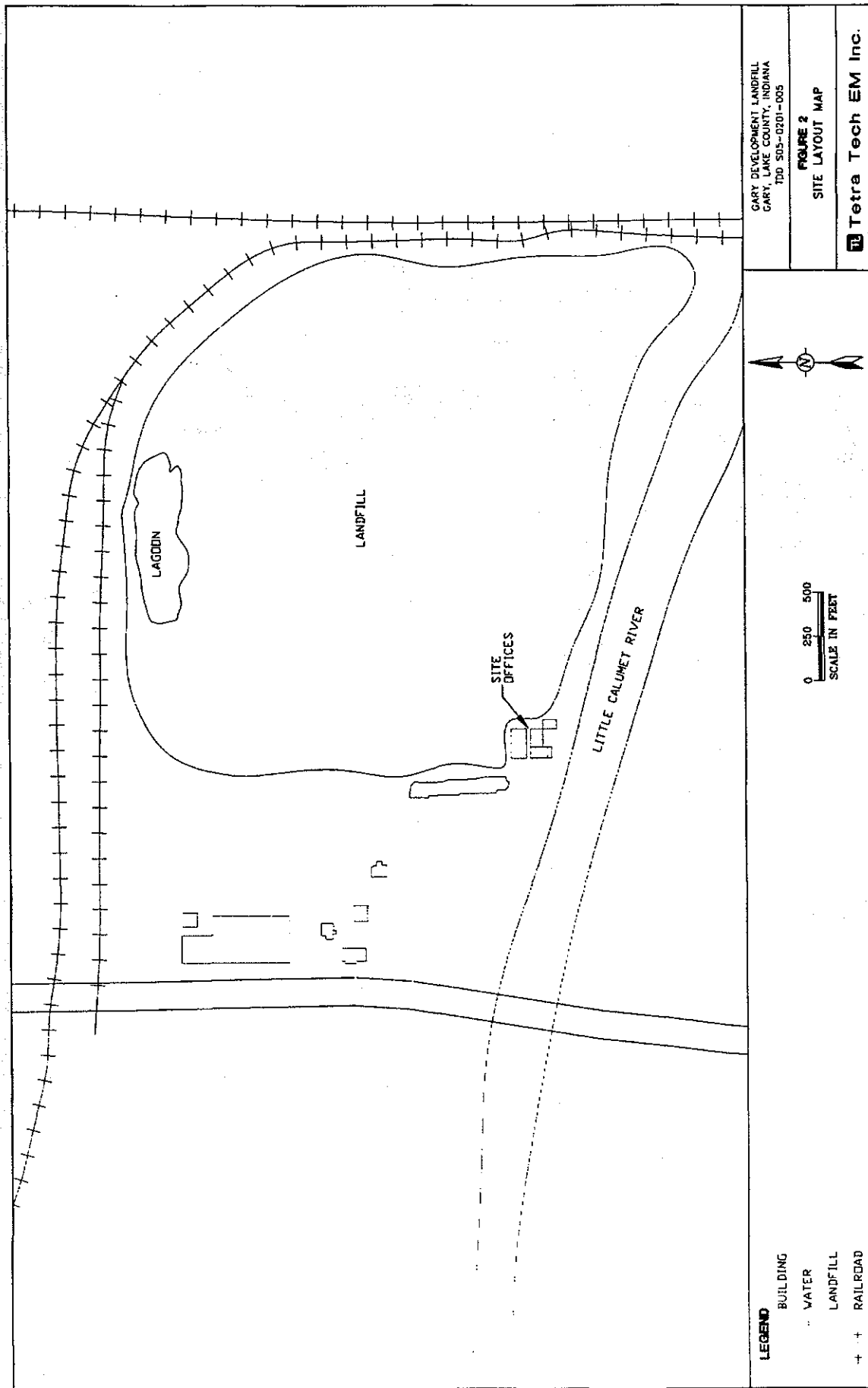
GARY DEVELOPMENT LANDFILL
GARY, LAKE COUNTY, INDIANA
TDD S05-0201-005

FIGURE 1
SITE LOCATION MAP

 Tetra Tech EM Inc.

G:\9009\0201005\FIGURE 1 SITE LOCATION MAP.dwg 06/18/2002 mark.larsen

SOURCE: MODIFIED FROM USGS, HIGHLAND, INDIANA, QUADRANGLE, 1991



3.0 EMERGENCY RESPONSE AND SITE ASSESSMENT ACTIVITIES

Emergency response and site assessment activities are discussed below. Site assessment activities included a site reconnaissance and sampling.

3.1 EMERGENCY RESPONSE ACTIVITIES

On 08 Jan 02, U.S. EPA requested that START conduct emergency response activities at the GDL site. Upon arriving at the site and meeting with U.S. EPA and IDEM personnel, START placed sorbent boom around the two leaking drums identified by IDEM (D-1 and D-2 on Figure 2), as well as downgradient of the drums to prevent the oil-like substance from leaking into the Grand Calumet River. In Level B personal protective equipment (PPE), START personnel then opened the drums and screened them using a photoionization detector (PID). Both of the drums were full. START did not record any readings above normal background conditions in the headspace of the drums. Two samples, D-1 and D-2, were collected for laboratory analyses of disposal characteristics, including flashpoint, semivolatile organic compounds (SVOC), volatile organic compounds (VOC), polychlorinated biphenyls (PCB), target analyte list (TAL) metals, and pH. The drums were staged on site to be overpacked the following day.

On 09 Jan 02, U.S. EPA, START, IDEM, and the Emergency and Rapid Response Services (ERRS) contractor Environmental Quality Management, Inc. (EQM), arrived at the site. ERRS overpacked the two drums sampled the day before and placed oil dry on the concrete pad where the drums had been stored. U.S. EPA requested START to perform a site assessment, including documentation and drum and tank sampling, to characterize the site. The site assessment is described in detail in Sections 3.3, 3.4, and 4.0

3.2 SITE RECONNAISSANCE

On 09 Jan 02, U.S. EPA, START, and ERRS arrived at the site. START conducted a site assessment and identified a total of 29 drums, five aboveground storage tanks (AST), and assorted small containers (see Figure 2). Twenty-four of the drums were identified as either empty or containing frozen material. Many of the drums outside the were in poor condition. During the reconnaissance, drums and tanks were numbered for later sampling. The drums and tanks were labeled chronologically using "D" for drums and "T" for tanks. Drums D-9B and D-15 were found to be leaking. ERRS removed these drums and placed



them in overpack containers for later sampling and disposal. An inventory of items found inside each of the buildings and an AST inventory are provided below.

Building 1. This building housed the Gary Development Company office in the south end, and a storage and service area in the north end. An empty 360-gallon AST was located in the northeast corner of the building. Additional items found in the building is provided below.

- One 1-gallon can of roofing cement
- Twenty 1-gallon latex paint cans
- Two 30-pound cylinders of Freon
- Eight electrical capacitors
- Eight cans of spray paint and spray lubricants
- One 1-gallon container of insecticide powder
- Two 1-quart bottles of household drain cleaner containing sulfuric acid
- One can of starting fluid

In addition, an acetylene cylinder was found outside Building 1.

Building 2. This building may have been used as a service garage. Two drums labeled as containing gear oil (D-12) and transmission fluid (D-13) were located in the southeast corner of the building. Both drums appeared to be in good condition. In addition, two 5-gallon buckets of oil and three 5-gallon buckets of grease were found in the building.

Building 3. This building appeared to have been used mainly as a storage garage, and the south side of the building housed an elevated office. The following small containers were discovered in the northern portion of this building:

- Eight 1-gallon and one 1-quart latex paint cans
- Seven 1-gallon and one 1-quart oil paint cans
- One automotive battery
- One 1-gallon container of liquid insecticide

Building 4. Building 4 was likely used for storage. A total of six drums were located on the east side of the warehouse. Drums D-23 and D-24 contained a total of 53 individual 1-quart containers of automotive



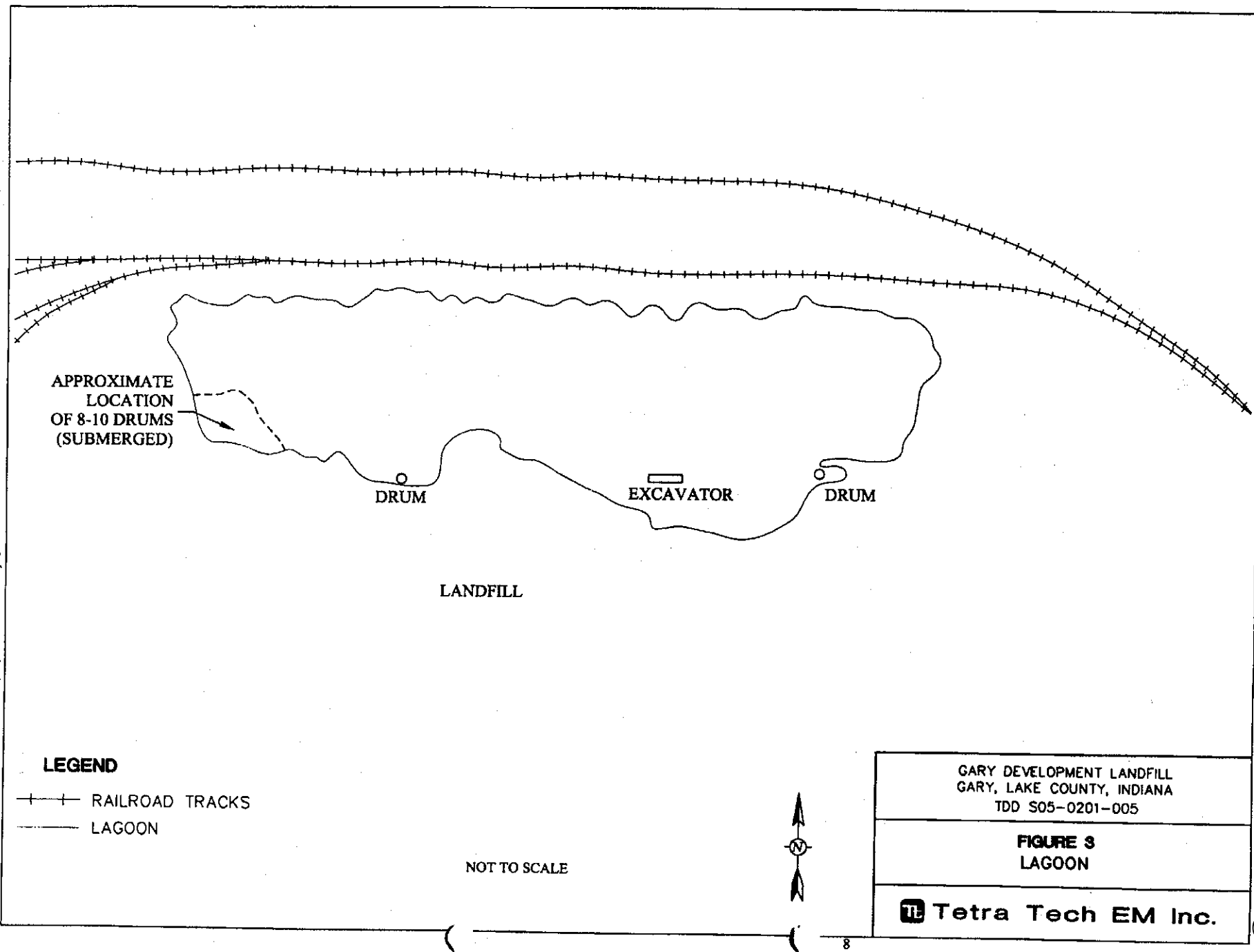
windshield cleaner with antifreeze. Drums D-19 through 22 were stainless steel drums with little to no contents. The west side of the building contained old furniture and assorted debris.

ASTs. During the site reconnaissance, several ASTs were observed. ASTs T-1 and T-5 were former fuel transport trailers and may have been used for fuel storage while Gary Development Company was in operation. Although the trailers were in poor condition, START observed no evidence of stained soils or leaking. AST T-1 was found to be empty and AST T-5 contained a small amount of residual sludge. AST T-2 is the fuel tank for a generator that had been abandoned at the site, and was found to be empty. Staining at the bottom of the tank indicated historical leaking. AST T-3, inside Building 1, was used for water storage and was found to be empty. AST T-4, located between Buildings 1 and 4, was used as a diesel storage tank. The AST was approximately one-eighth full of diesel fuel. There was no evidence of leakage, although the fuel dispensing line showed signs of deterioration. The table below summarizes the ASTs found at the GDL site.

SUMMARY OF ABOVEGROUND STORAGE TANKS

Tank No.	Capacity (gallons)	Contents
T-1	5,500	Empty
T-2	360	Empty
T-3	360	Empty
T-4	360	<45 gallons of diesel
T-5	5,500	Residual sludge

On 04 Apr 02, U.S. EPA, START and IDEM conducted site reconnaissance around the lagoon area north of the landfill (See Figure 3). During the site visit, IDEM pointed out two visible drums and the approximate location of 8-10 other drums to U.S. EPA and START. One visible drum was located near the southeastern bank of the lagoon and appeared to be rusted through. The second visible drum was located at the south-central bank of the lagoon. Another 8 to 10 drums are believed to be completely submerged in the southwestern portion of the lagoon (IDEM observed the drums during a flyover they . The contents of all the drums are unknown.



3.3 SAMPLING ACTIVITIES

To evaluate whether the GDL site poses a threat to human health or the environment, START conducted a sampling event on 09 Jan 02. Four liquid drum samples and one liquid tank sample were collected at the site, in addition to the two liquid drum samples collected on 08 Jan 02. Figure 4 shows the sampling locations. START conducted the sampling event in Level B PPE. Drums that contained frozen material could not be sampled, and were staged for sampling at a later date.

On 19 Feb 02, U.S. EPA, START, and EQ returned to the GDL site to sample the drums that were frozen during the previous sampling event. Samples were characterized and collected by EQ. One composite sample was collected from eight drums and one grab sample was collected from one drum. Table 1 summarizes the drums and AST that were sampled at the GDL site.

On 9 May 02, U.S. EPA and START returned to the GDL site to collect surface water samples from the lagoon located on the northeast side of the site. START used a canoe to survey the lagoon and delineate sample locations. The surface water samples were collected using a Kemmerer sampler from a discrete depth, and basic water quality parameters, including pH, temperature, and conductivity, were measured using a water quality meter. During the event, START observed the drum noted during a previous reconnaissance, and found it to be an empty, crushed polyethylene 55-gallon drum. START also observed the submerged excavator, but could not see any submerged drums due to turbid water conditions. A total of five surface water samples, including one duplicate sample, were collected from the lagoon. The table below provides a summary of the samples and Figure 5 shows the sample locations.

Sample ID	Sample Depth	pH	Conductivity	Temperature
GD-SW-0203-01	2-3 feet	8.62	3.14 ms/cm	61.7°F
GD-SW-0405-02	4-5 feet	8.99	3.62 ms/cm	60.8°F
GD-SW-1213-03	12-13 feet	8.91	3.61 ms/cm	60.9°F
GD-SW-0809-04	8-9 feet	8.59	3.68 ms/cm	60.9°F

Note:

ms/cm = Milliseimen per centimeter



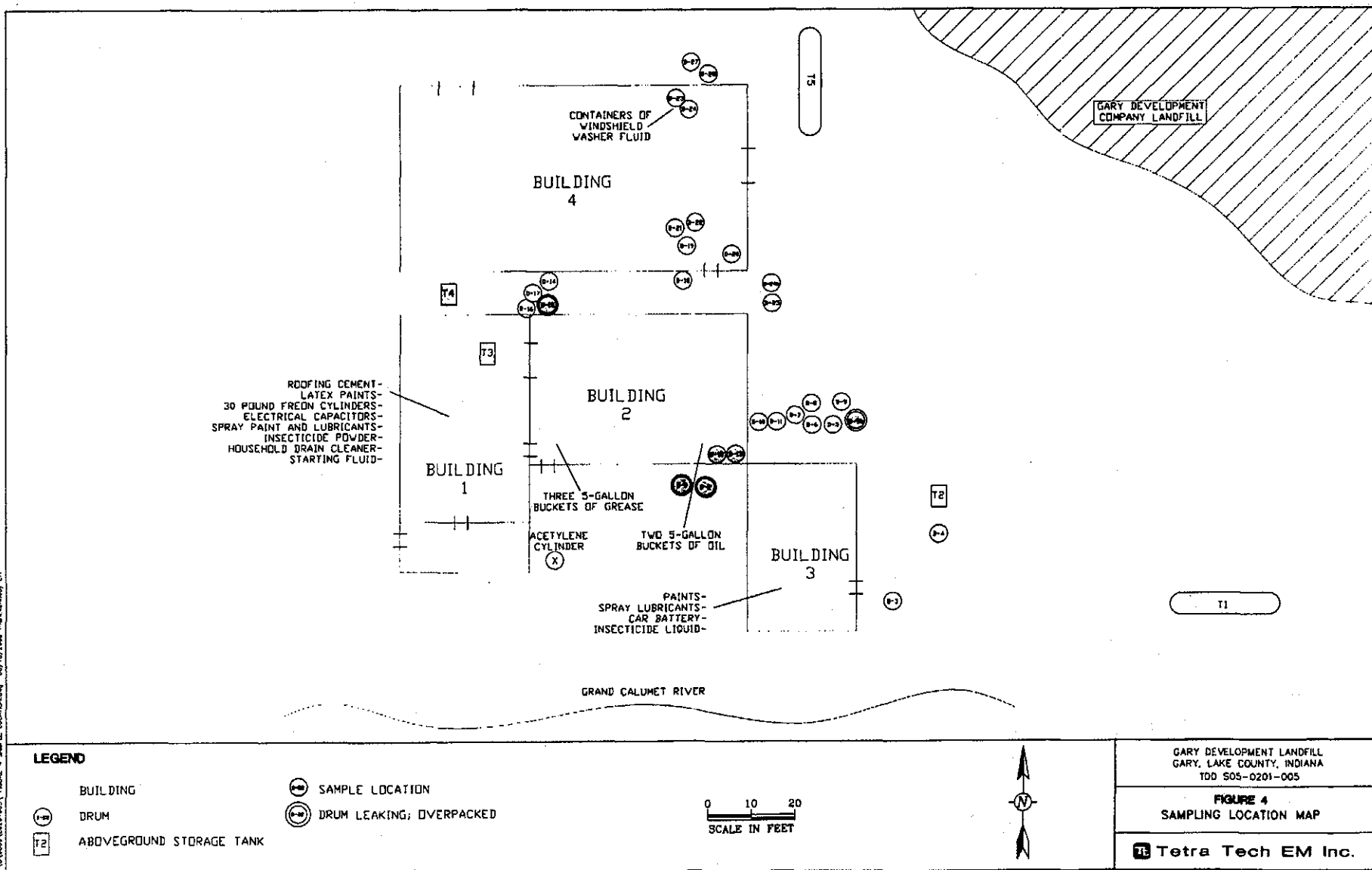
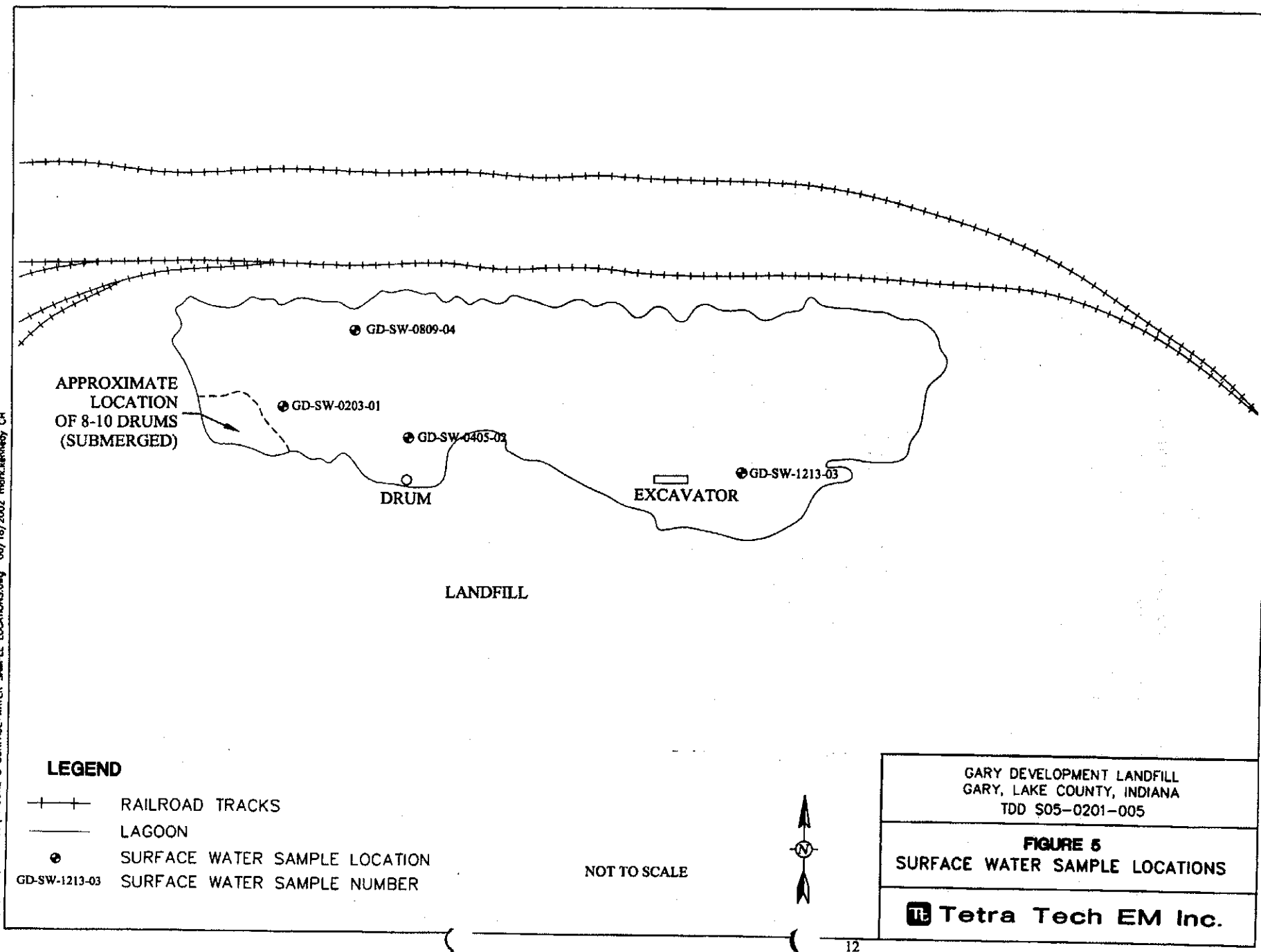


TABLE 1
DRUM AND ABOVEGROUND STORAGE TANK SAMPLE LOG SUMMARY

Drum or AST No.	Sample Date	Volume Present	Comment
D-1	08 Jan 02	55 gallons	Yellow oil-like substance
D-2	08 Jan 02	55 gallons	Yellow oil-like substance
D-9B	09 Jan 02	55 gallons	Black oil-like substance
D-12	09 Jan 02	45 gallons	Drum labeled "80-90 WT Gear Oil"; oil-like substance
D-13	09 Jan 02	< 10 gallons	Drum labeled "Citgo Power Convertor Transmission Fluid #33802"; an oil-like substance
D-15	09 Jan 02	< 20 gallons	Oil-like substance
T-4	09 Jan 02	< 50 gallons	Diesel fuel
D-3	19 Feb 02	< 10 gallons	Clear liquid/water
D-8	19 Feb 02	< 10 gallons	Clear liquid/water
D-14	19 Feb 02	< 30 gallons	Clear liquid/water
D-16	19 Feb 02	< 20 gallons	Clear liquid/water
D-17	19 Feb 02	<10 gallons	Clear liquid/water
D-18	19 Feb 02	<20 gallons	Clear liquid/water
D-21	19 Feb 02	<10 gallons	Clear liquid/water
D-25	19 Feb 02	<20 gallons	Clear liquid/water
D-28	19 Feb 02	<10 gallons	Yellow liquid



GARY DEVELOPMENT LANDFILL GARY, LAKE COUNTY, INDIANA TDD S05-0201-005
FIGURE 5 SURFACE WATER SAMPLE LOCATIONS
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4.0 ANALYTICAL RESULTS

The drum and tank samples collected on 08 Jan 02 and 09 Jan 02 were packed on ice and shipped to Great Lakes Analytical Laboratory in Buffalo Grove, Illinois for laboratory analyses under analytical TDD No. S05-0201-006. The samples were then analyzed for PCBs, VOCs, SVOCs, TAL metals, flashpoint, and pH. START obtained laboratory analytical results for the six liquid drum samples and one liquid tank sample collected at the GDL site. The two drum samples collected on 19 Feb 02 were sent to Severn Trent Services in University Park, Illinois for laboratory analyses under the same analytical TDD. The samples were then analyzed for PCBs, reactive cyanide, pH, flashpoint, TAL metals, SVOCs, VOCs, total organic halides, and British Thermal Unit (BTU) analysis. The surface water samples collected from the lagoon on 09 May 02 were also sent to Great Lakes Analytical Laboratories, under the same analytical TDD. The samples were then analyzed for PCBs, VOCs, SVOCs, and TAL metals. Analytical parameters for all of the samples were chosen based on the criteria for identification of hazardous waste set forth in 40 CFR Part 261, as well as general disposal criteria. The data validation report and validated analytical results are presented in Appendix B. Analytical results for the drum and tank samples with at least one detection of the analytical parameters are summarized in Table 2, and analytical results for the second round of drum samples are summarized in Table 3. Table 4 summarizes analytical results of the surface water samples. Significant analytical results are also discussed below.

Although none of the sample analytical results from drum samples collected on 08 and 09 Jan 02 met or exceeded criteria set forth in 40 CFR Part 261 for hazardous waste, significant levels of various VOCs and SVOCs were detected in the samples. VOCs detected included benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds), and SVOCs detected included anthracene, butyl benzyl phthalate, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene. The compounds detected in the drum samples are consistent with waste oils, and the compounds detected in AST sample T-4 are consistent with diesel fuel.

While trace levels of metals, VOCs and SVOCs were detected in drum samples D3-25 and D-28 collected on 19 Feb 02, no sample analytical results met or exceeded criteria set forth in 40 CFR Part 261 for hazardous waste. However, sample D3-25 had a flashpoint of 80 degrees F, qualifying it as a characteristic hazardous waste.

Trace levels of metals were detected in the surface water samples collected on 09 May 02, though none of the analytical results met or exceeded regulatory criteria used by the U.S. EPA for surface water direct contact exposure or surface water/groundwater interface criteria.



TABLE 2
SUMMARY OF DRUM SAMPLE ANALYTICAL RESULTS
08-09 JAN 02

Analytical Parameter	Sample No.						
	D-1	D-2	D-9B	D-12	D-13	D-15	T-4
Total metals (mg/L)							
Aluminum	ND	ND	ND	ND	0.547J	ND	ND
Antimony	0.135J	0.101J	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	0.114J	ND	ND	ND
Cadmium	0.161J	ND	ND	ND	ND	ND	ND
Calcium	31.0J	750J	10.5J	3.66J	1.420J	32.7J	ND
Chromium (total)	ND	ND	0.0491J	0.0534J	ND	ND	ND
Copper	ND	0.0853J	0.481J	0.616J	0.343J	ND	0.0745J
Iron	ND	7.91J	7.93J	ND	ND	ND	ND
Lead	0.600J	0.0963J	6.33J	ND	0.115J	ND	ND
Magnesium	ND	2.44J	19.4J	ND	4.21J	ND	ND
Manganese	ND	0.187J	ND	ND	0.122J	ND	ND
Mercury	0.000512J	ND	0.00104J	ND	ND	ND	ND
Nickel	ND	ND	ND	0.0660J	ND	ND	ND
Potassium	ND	4.68J	5.25J	ND	8.34J	66.3J	3.61J
Selenium	ND	ND	0.0583J	ND	ND	ND	ND
Sodium	1.91J	7.46J	9.46J	3.95J	18.0J	ND	0.731J
Thallium	ND	ND	ND	ND	0.116J	1.59J	ND
Zinc	300J	461J	45.8J	5.80J	593J	56.3J	1.39J
VOCs (mg/kg)							
Benzene	1,860J	ND	2,510J	ND	ND	ND	ND
Ethylbenzene	ND	162J	13,400J	ND	360J	ND	53,000J
Toluene	ND	4,690J	19,600J	66,700J	10,900J	ND	47,200J
Xylenes (total)	384J	892J	53,000J	4,450J	1,930J	ND	348,000J
SVOCs (µg/kg)							
Anthracene	ND	ND	ND	ND	ND	ND	67,400J
Butyl benzyl phthalate	ND	2,990,000	ND	ND	2,930,000	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND	227,000J
2-Methylnaphthalene	ND	ND	202,000	ND	ND	ND	6,020,000J
Naphthalene	ND	ND	53,000	ND	ND	ND	2,080,000J
Phenanthrene	ND	ND	59,200	ND	ND	ND	939,000J
Pyrene	ND	ND	ND	ND	ND	ND	397,000J
Physical Properties							
pH (standard units)	7.14	7.11	6.67	6.83	6.83	6.50	6.45
Flashpoint (degrees F)	>220	>220	161	191	>220	171	181

Notes:

J = Estimated value
mg/L = Milligram per liter
ND = Not detected
SVOC = Semivolatile organic compound

VOC = Volatile organic compound
µg/kg = Microgram per kilogram



TABLE 3
SUMMARY OF SAMPLE ANALYTICAL RESULTS
19 FEB 02

Analytical Parameter	Sample No.	
	D3-25 Comp	D-28
Total Metals (mg/L)		
Aluminum	0.0971	NA
Barium	0.0299	NA
Calcium	32.1	NA
Chromium (total)	0.440	NA
Cobalt	0.0063	NA
Copper	0.0222	NA
Iron	2.22	NA
Lead	0.0065	NA
Magnesium	6.48	NA
Manganese	0.276	NA
Nickel	0.277	NA
Potassium	3.54	NA
Selenium	0.0021	NA
Sodium	18.5	NA
Zinc	0.582	NA
VOCs (µg/L)		
Acetone	1,300	NA
Toluene	11	NA
SVOCs (mg/L)		
Benzoic acid	1,600	NA
Benzyl alcohol	8,300	NA
Diethyl phthalate	12,000	NA
Physical Properties		
pH (standard units)	6.53	NA
Flashpoint (degrees F)	80	120
BTU/lb	NA	19,250
TOX	NA	420

Notes:

BTU = British thermal unit
mg/L = Milligram per liter
NA = Not analyzed
TOX = Total organic halides, as chlorine
µg/L = Microgram per liter



TABLE 4
SUMMARY OF SURFACE WATER SAMPLE ANALYTICAL RESULTS
09 MAY 02

Analytical Parameter	Sample No.				
	GD-SW-0203-01	GD-SW-0203-01D	GD-SW-0405-02	GD-SW-1213-03	GD-SW-0809-04
Total metals (mg/L)					
Calcium	39.3	39.2	39.2	38.5	39.2
Chromium (total)	ND	ND	0.0129	ND	ND
Copper	0.0998	0.0717	ND	ND	ND
Iron	0.260	0.253	0.258	0.339	0.323
Lead	0.00938	0.00647	ND	ND	ND
Magnesium	108	107	107	107	108
Manganese	0.0752	0.0741	0.0713	0.130	0.0788
Mercury	0.000368	ND	ND	ND	ND
Nickel	ND	ND	ND	0.0581	ND
Potassium	135	132	134	135	135
Sodium	794	787	784	793	788

Notes:

mg/L. = Milligram per liter
ND = Not detected



5.0 POTENTIAL SITE-RELATED THREATS

Paragraph (b)(2) of 40 CFR Section 300.415 lists factors to be considered when determining the appropriateness of a potential removal action at a site. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) applies to the hazardous substances at the GDL site, and the Oil Pollution Act of 1990 (OPA) applies to nonhazardous petroleum-related wastes at the GDL site. Section 2702 of Title I of OPA establishes the liability of responsible parties for removal costs and damages caused by oil spills and discharges into navigable waterways. Subsection (b)(2) of Section 2702 outlines the damages covered under OPA.

Factors outlined in 40 CFR Section 300.415 that are applicable to the GDL site are discussed below, followed by a summary of threats related to the GDL site under OPA.

CERCLA Threats

- **Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, or pollutants, or contaminants:** Hazardous substances and pollutants found at the GDL site include electrical capacitors (that may contain PCBs), insecticides, flammable liquids, and acidic liquids, as well as oil wastes containing low levels of BTEX compounds and polynuclear aromatic hydrocarbons (PAH), which include anthracene, fluorene, naphthalene, and pyrene. Many of these substances are present in deteriorating drums. Hazardous substances and pollutants in soil at the GDL site would pose threats to site visitors and wildlife. During the site assessment, START observed evidence of trespassing and also encountered several dogs inside one of the buildings. In addition, hazardous substances and pollutants discharging into the Grand Calumet River from the GDL site would pose threats to wildlife in or near the waterway.

Bendiocarb, the active ingredient in the insecticide powder found at the GDL site, is an extremely toxic substance. It has received the U.S. EPA's Acute Toxicity Category I rating for oral exposure, which is the highest rating. Animal studies have shown that bendiocarb inhibits cholinesterase activity in the blood, plasma, and brain. The chemical has been shown to degrade rapidly and is soluble in water.



According to the Agency for Toxic Substances and Disease Registry (ATSDR) and Department of Health and Human Services, certain PAHs are suspected carcinogens. According to animal studies, PAHs can have harmful effects on skin, on body fluids, and on the ability to fight disease. Acute exposure to naphthalene has been shown to destroy red blood cells, as well as cause fatigue, nausea, diarrhea, restlessness, blood in urine, and vomiting.

Exposure to BTEX compounds has also been shown to cause adverse health effects. Inhalation of elevated levels of BTEX compounds has been shown to damage the central nervous system and cause nausea, dizziness, confusion, and throat and eye irritation. Benzene is a widely used chemical formed by both natural processes and human activities. Breathing benzene vapor can cause drowsiness, dizziness, and unconsciousness. Long-term benzene exposure has adverse effects on the bone marrow and can cause anemia and leukemia. Ethylbenzene is a chemical that can be found in gasoline and paints. Breathing ethylbenzene can cause dizziness and throat and eye irritation. Toluene is a chemical that is often used as a solvent in paints and adhesives. Exposure to toluene has been shown to affect the central nervous system. Xylene is a chemical that can be found in gasoline, paint, and paint thinners. Inhalation of elevated levels of xylenes can cause loss of balance, dizziness, and confusion.

The electrical capacitors found at the GDL site are suspected to contain PCBs. PCBs are a mixture of chemicals that have historically been used as coolants and lubricants, specifically in electrical capacitors. The commercial use of PCBs was stopped in 1970 due to concern of detrimental health effects and their accumulation in the environment. According to ATSDR, health effects associated with chronic exposure to PCBs include liver damage, immune system damage of breastfeeding children, and memory and motor-skill loss of breastfeeding children. PCBs have been shown to accumulate in fish tissue and remain in the foodchain.

- **Actual or potential contamination of drinking water supplies or sensitive ecosystems:** As discussed above, the GDL site is bordered on the south by the Grand Calumet River, supports sensitive aquatic and riparian ecosystems. Hazardous substances and contaminants discharging into the waterway from the site would pose



threats to these and surrounding ecosystems and impact the overall downstream water quality.

- **Weather conditions that may cause pollutants or contaminants to migrate or be released:** Many of the contaminants present at the GDL site are located in drums that are stored outside. Precipitation and weathering have deteriorated many of the drums, which could result in off-site migration of contaminants to the Grand Calumet River.

OPA Threats

- **Natural Resources:** OPA was created to prevent and respond to oil spills in the nation's navigable waterways. It also covers damages to natural resources. According to OPA, natural resources include land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other resources. Petroleum products are stored at the GDL site in deteriorating drums and ASTs. The potential exists for these contaminants to be released from the site to the Grand Calumet River, a navigable waterway. By removing the OPA regulated wastes from the GDL site, potential impacts to the Grand Calumet River and its associated natural resources can be mitigated.

6.0 REMOVAL COST PROJECTION

Sample analytical results indicate the presence of hazardous substances and petroleum products at the GDL site. Many of the drums containing petroleum products are deteriorating and pose a threat of release. Drums have been observed in the lagoon, although the contents are unknown. In addition, an AST in poor condition contains approximately 45 gallons of diesel fuel. Based on the NCP and OPA, the contaminants present on site pose a threat to both human health and the environment. Mitigation of threats to human health and the environment at the GDL site should include (1) removal of drums of nonhazardous special waste and assorted small containers of hazardous substances and (2) crushing and disposal of empty drums and ASTs.

A cost estimate has been prepared for disposal of contaminants present at the GDL site (see Appendix C) and performing water sampling and a hydrographic survey of the lagoon. The cost estimate was generated using the Removal Cost Management System (RCMS) 2000 software program (Version 1.2), R.S. Means Company environmental remediation cost data, and consultation with a marine diving consultant. The proposed removal action includes the following tasks:

- Hazard categorize and sample the remaining nine unsampled drums (contents frozen during the site assessment)
- Arrange for transport and disposal of overpacked drums, lab packs, and other small containers
- Crush all empty drums and ASTs containing OPA-regulated wastes
- Arrange for transport and disposal of crushed drums and ASTs
- Decontaminate all equipment.

These activities are estimated to require 5.5 10-hour work days and to cost approximately \$26,950.27

While the CERCLA and OPA removal may be conducted concurrently, the tasks and costs have been separated for CERCLA and OPA regulated wastes, as discussed below.

Removal Cost Estimate for CERCLA-Regulated Wastes

Removal of the CERCLA-regulated wastes at the GDL site would involve the disposal of all small containers of hazardous waste present at the site. An estimated 10 waste streams will be generated from



the small containers, and these will be disposed of as lab pack containers. The disposal estimate for these containers is \$65.00 each.

The work is expected to require 1.5 10-hour workdays. Activities will include site mobilization, hazard categorization of the small containers to identify individual waste streams, containerization of the small containers in lab packs, and transport and disposal of the lab packs. Included in the cost estimate are 10 55-gallon drums that will be used for lab packs. A crew of two cleanup technicians and a response manager was assumed in order to estimate the costs. Government costs were based on the hours required for personnel including one OSC and one START member for the length of the removal action. The total cost for the removal of CERCLA-regulated wastes is estimated to be \$6,907.37 (See tables C-1 and C-2 in Appendix C).

Removal Cost Estimate for OPA-Regulated Wastes

Removal of the OPA-regulated wastes at the GDL site would involve the disposal of all oil-related wastes present at the GDL site. These wastes include drums with contents, recovered diesel from AST T-4, and crushed empty drums and ASTs. For the purposes of this cost estimate, the nine unsampled drums are included as OPA-regulated wastes. The disposal estimate for the overpacked drums is \$65.71 each, and the disposal estimate for the crushed drums and ASTs is \$30.00 per ton.

The work is expected to require 4 10-hour work days. Activities will include site mobilization, overpacking the drums with contents, recovering the diesel from AST T-4, sampling the remaining nine drums that have not been sampled, staging and crushing the empty drums and ASTs, transportation and disposal of overpacked drums, and disposal of crushed drums and ASTs. Included in the cost estimate are 11 85-gallon overpack drums and a roll-off box used for disposal of the crushed drums and ASTs. A crew consisting of two cleanup technicians, one equipment operator (for 1 day), and a response manager was assumed in order to estimate costs. Government costs were based on the hours required for personnel including one OSC and one START member for the duration of the removal action. The total costs for the removal of OPA-regulated wastes is estimated to be \$20,042.90 (See tables C-3 and C-4 in Appendix C).



7.0 SUMMARY

The GDL site is located in a primarily industrial and commercial area in Gary, Lake County, Indiana. The Grand Calumet River borders the site to the south. Drums and ASTs in degraded condition are present at the site inside the buildings as well as throughout the site property, including the lagoon on the north side of the landfill. During the site assessment, START observed that some of these drums were leaking. START also conducted a reconnaissance and surface water sampling event in the lagoon located on GDL site. There are reportedly several submerged drums in the western portion of the lagoon, though due to turbid water conditions START was not able to confirm this. The surface water sample analytical results did not indicate the presence of significant concentrations of contaminants in the lagoon. However, analytical results for samples collected from the drums and AST are consistent with petroleum products. In addition, small containers of hazardous materials were observed at the site. Therefore, the site meets the criteria for a removal action outlined in 40 CFR Section 300.415(b)(2) and Section 2702 of Title I of OPA.



APPENDIX A
PHOTOGRAPHIC LOG
(Four Pages)



 Tetra Tech EM Inc.**Photograph No.:**

1

TDD No.:

S05-0201-005

Location:

Gary Development Landfill (GDL) site

Subject:

Two drums (left) initially found to be leaking

Orientation:

North

Date:

08 Jan 02

**Photograph No.:**

2

TDD No.:

S05-0201-005

Location:

GDL site

Subject:

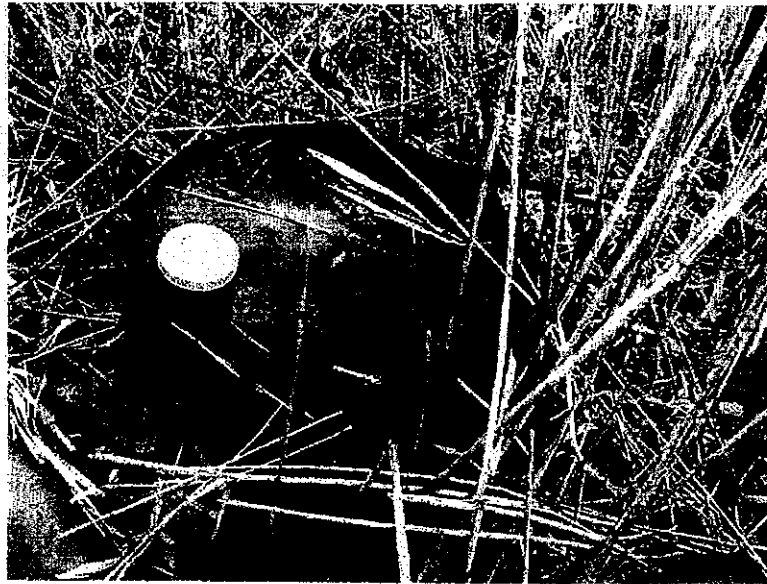
Emergency and Rapid Response Services (ERRS) crew using oil-dry to decontaminate area where drums had leaked

Orientation:

North

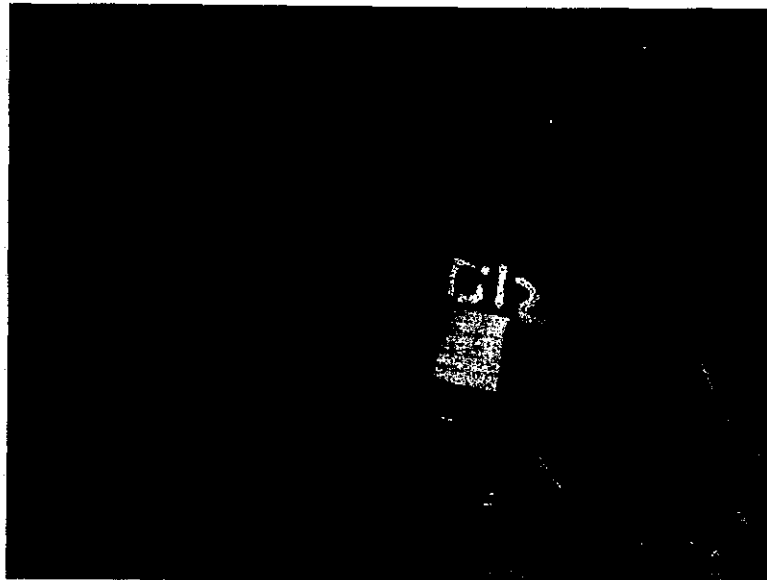
Date:

08 Jan 02

Tetra Tech EM Inc.

Photograph No.: 3
TDD No.: S05-0201-005
Location: GDL site
Subject: Drum containing oil on the east side of the site

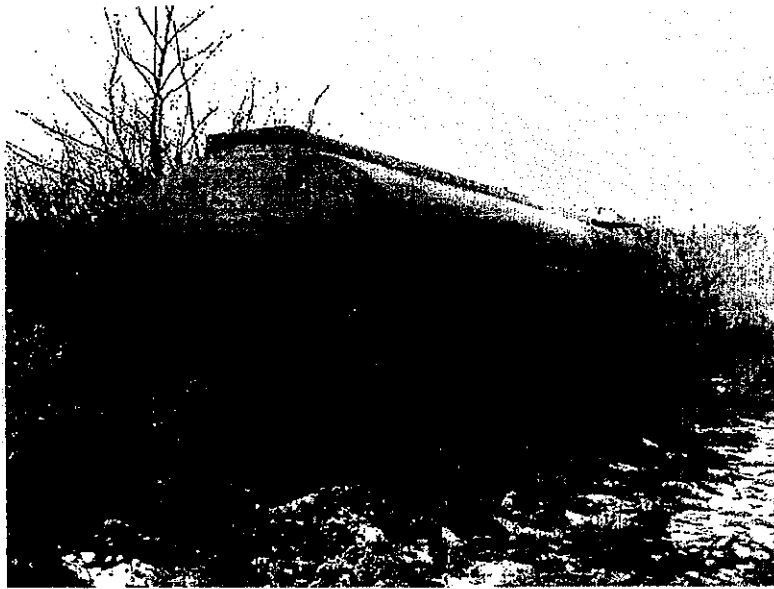
Orientation: Northeast
Date: 08 Jan 02



Photograph No.: 4
TDD No.: S05-0201-005
Location: GDL site
Subject: Drums containing oil inside Building 2

Orientation: South
Date: 08 Jan 02

Tetra Tech EM Inc.

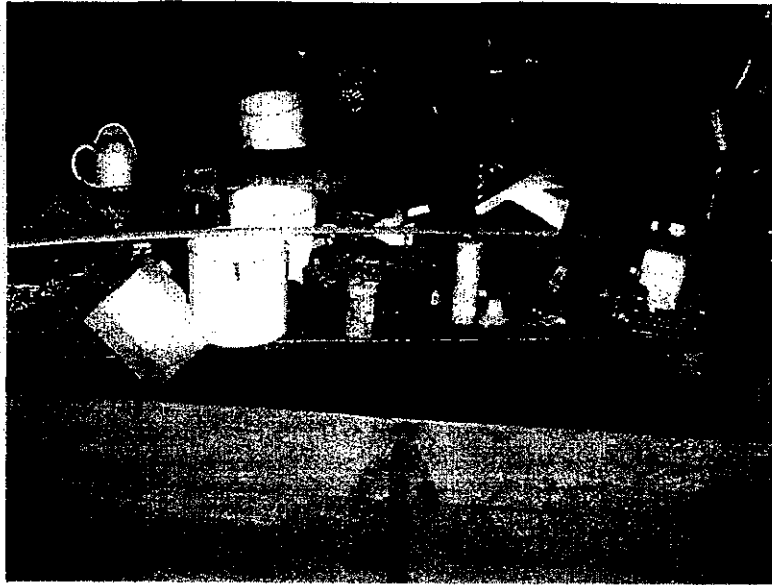


Photograph No.:	5	Orientation:	Southwest
TDD No.:	S05-0201-005	Date:	08 Jan 02
Location:	GDL site		
Subject:	Empty fuel tank located on service drive adjacent to the Grand Calumet River		



Photograph No.:	6	Orientation:	Northeast
TDD No.:	S05-0201-005	Date:	08 Jan 02
Location:	GDL site		
Subject:	Tank containing approximately 45 gallons of diesel fuel		

 Tetra Tech EM Inc.



Photograph No.: 7
TDD No.: S05-0201-005
Location: GDL site
Subject: Electrical capacitors (at front of table above arrow) inside Building 1

Orientation: North
Date: 08 Jan 02



Photograph No.: 8
TDD No.: S05-0201-005
Location: GDL site
Subject: Paint cans and household cleaners inside Building 1

Orientation: North
Date: 08 Jan 02

APPENDIX B

DATA VALIDATION REPORT AND VALIDATED ANALYTICAL RESULTS

(86 Pages)





Tetra Tech EM Inc.

200 E. Randolph Drive, Suite 4700 ♦ Chicago, IL 60601 ♦ (312) 856-8700 ♦ FAX (312) 938-0118

MEMORANDUM

Date: 04 Feb 02

To: Brad White, Project Manager, Tetra Tech EM Inc. (Tetra Tech)
Superfund Technical Assessment and Response Team (START) for Region 5

From: Lisa Graczyk, Chemist, Tetra Tech START for Region 5

Subject: Data Validation for
Gary Development Landfill Site
Gary, Indiana
Analytical Technical Direction Document (TDD) No. S05-0201-006
Project TDD No. S05-0201-005

Laboratory: Great Lakes Analytical (GLA), Buffalo Grove, Illinois
Work Order No. B201120
Total Metal, Volatile Organic Compound (VOC), Semivolatile Organic Compound (SVOC),
Polychlorinated Biphenyl (PCB), Flash Point, and pH Analysis of Seven Waste Samples

1.0 INTRODUCTION

Tetra Tech START for Region 5 validated total metal, VOC, SVOC, PCB, flash point, and pH analytical data for seven waste samples collected on 08 and 09 Jan 02 from the Gary Development Landfill site in Gary, Indiana. The samples were analyzed under the above-referenced work order by GLA using U.S. Environmental Protection Agency (U.S. EPA) SW-846 Methods 6010B, 7470A, and 7421 for total metal analysis; 8260B for VOC analysis; 8270C for SVOC analysis; 8082 for PCB analysis; and 9040B for pH analysis and using American Society for Testing and Materials (ASTM) Method D93-85 for flash point analysis.

The data were validated in general accordance with U.S. EPA's "Contract Laboratory Program National Functional Guidelines for Organic Data Review" dated Oct 99 and "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" dated Feb 94. Organic data validation

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0201-006
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consisted of a review of the following quality control (QC) parameters: holding times, instrument performance checks, initial and continuing calibrations, blank results, surrogate results, matrix spike and matrix spike duplicate (MS/MSD) results, laboratory control sample (LCS) results, internal standard (IS) area counts, and target compound identification. Inorganic data validation consisted of a review of the following QC parameters: holding times, initial and continuing calibrations, blank results, LCS results, interference check sample (ICS) results, and MS/MSD results.

Section 2.0 discusses the results of the organic data validation, Section 3.0 discusses the results of the inorganic data validation, and Section 4.0 presents an overall assessment of the data. The attachment to this memorandum contains GLA's summary of analytical results as well as START's handwritten data qualifications where warranted.

2.0 ORGANIC DATA VALIDATION RESULTS

The results of START's organic data validation are summarized below in terms of the QC parameters reviewed. The data qualifier below was applied to the sample analytical results where warranted (see the attachment).

- J - The compound was detected. The reported numerical value is considered to be estimated for QC reasons.

2.1 HOLDING TIMES

The samples were analyzed within the holding time limits of (1) 14 days to extraction and 40 days from extraction to analysis for SVOCs and PCBs and (2) 14 days to analysis for VOCs.

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Gary Development Landfill Site
Analytical TDD No. S05-0201-006
Project TDD No. S05-0201-005
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2.2 INSTRUMENT PERFORMANCE CHECKS

The decafluorotriphenylphosphine and bromofluorobenzene instrument performance checks met the QC abundance criteria for the SVOC and VOC analyses, respectively. The chromatographic resolution was adequate for the PCB analysis.

2.3 INITIAL AND CONTINUING CALIBRATIONS

For the VOC and SVOC analyses, the relative standard deviation (RSD) from the initial calibration result was less than or equal to the QC limit of 30 percent for the target compounds detected. The continuing calibration results were less than or equal to the QC limit of 25 percent difference between the initial calibration relative response factor and the continuing calibration relative response factor for the target compounds detected.

For the PCB analysis, the initial calibration result was within the QC limit of less than or equal to 20 percent RSD for the average of the five calibration factors (CF) for a single Aroclor. The continuing calibration standards were within the QC limit of less than or equal to 15 percent difference between the mean CF for the initial calibration curve and the CF for the continuing calibration.

2.4 BLANK RESULTS

A method blank was run with the analytical batch in the proper sequence. No target compounds were detected in the blank for the VOC, SVOC, or PCB analysis.

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Gary Development Landfill Site
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2.5 SURROGATE RESULTS

For the VOC analysis, the results for three of the four surrogates in each sample were outside the laboratory-established QC limits; therefore, all positive sample results for VOCs were flagged "J" as estimated. For the SVOC analysis, the results for two base/neutral surrogates in sample T-4 were outside the laboratory-established QC limits; therefore, positive base/neutral SVOC results for sample T-4 were flagged "J" as estimated. Recoveries for the surrogates were within the QC limits specified by the laboratory for the PCB analysis.

2.6 MS/MSD RESULTS

MSs and MSDs were not analyzed during the organic analyses. No qualifications were applied for this data gap.

2.7 LCS RESULTS

For the VOC analysis, LCS recoveries were within the QC limits specified by the laboratory except for the following compounds: chloromethane; 1,1-dichloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; trans-1,2-dichloroethene; trans-1,3-dichloropropene; methylene chloride; and vinyl chloride. Because these compounds were not detected in the samples, no qualifications were warranted.

No LCS was analyzed during the SVOC analysis. However, GLA analyzed a duplicate of sample D13. The relative percent difference between the duplicate result and the sample result was 2.42 percent, which is acceptable.

For the PCB analysis, LCS recoveries were within the QC limits specified by the laboratory.

Data Validation for
Gary Development Landfill Site
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For the flash point analysis, the laboratory instrument was checked using a p-xylene standard, and it generated a measurement of 81.4°F as the flash point. The flash point of p-xylene is approximately 81 °F; therefore, the instrument appears to have been working properly. This check is the only QC parameter that applies to the flash point analysis.

2.8 IS AREA COUNTS

For the VOC and SVOC analyses, the IS area counts were within the QC limits of -50 to +100 percent of those for the calibration standard. The retention times for the ISs were within the QC limit of ± 30 seconds. IS area counts do not apply to the PCB analysis.

2.9 TARGET COMPOUND IDENTIFICATION

A spot-check of the chromatograms for the VOC, SVOC, and PCB analyses confirmed the target compound identifications for the samples.

3.0 INORGANIC DATA VALIDATION RESULTS

The results of START's inorganic data validation are summarized below in terms of the QC parameters reviewed. The data qualifiers below were applied to the sample analytical results where warranted (see the attachment).

- J - The analyte was detected. The reported numerical value is considered to be estimated for QC reasons.
- UJ - The analyte was not detected. The reported sample detection limit is considered to be estimated for QC reasons.

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0201-006
Project TDD No. S05-0201-005
Page 6

3.1 HOLDING TIMES

All the samples were analyzed within the holding time limits of (1) 28 days for mercury and (2) 6 months for other metals. The pH analytical method (SW-846 Method 9040B) states that samples should be analyzed "as soon as possible." The samples were analyzed for pH on the day of their receipt by the laboratory, meeting the holding time requirement.

3.2 INITIAL AND CONTINUING CALIBRATIONS

During the initial and continuing calibrations, recoveries were within the QC limits of 80 to 120 percent for mercury and 90 to 110 percent for other metals except for potassium and sodium. Positive sample results for potassium and sodium were therefore flagged "J" as estimated.

For the pH analysis, the pH meter was checked using a standard buffer solution with a pH of 7.00 before and after the analysis. The pH meter generated readings of 6.99 and 7.00; therefore, the instrument appears to have been working properly. Aside from the holding time requirement (see Section 3.1), this check is the only QC parameter that applies to the pH analysis.

3.3 BLANK RESULTS

Appropriate blanks, such as initial calibration blanks, continuing calibration blanks, and method blanks, were run with each analytical batch. No target analytes were found in the blanks at concentrations above the instrument detection limits.

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0201-006
Project TDD No. S05-0201-005
Page 7

3.4 LCS RESULTS

An LCS was analyzed with each analytical batch. The recoveries were within the laboratory-established QC limits for each target analyte.

3.5 ICS RESULTS

The ICS results were within the QC limits of 80 to 120 percent recovery.

3.6 MS/MSD RESULTS

MSs and MSDs were analyzed with the samples. For silver only, the percent recoveries were within the QC limits established by the laboratory. The percent recoveries for lead for the MSs and MSDs were below the QC limits; therefore, the quantitation limits for lead were flagged "UJ" as estimated, and the positive sample results for lead were flagged "J" as estimated. The percent recoveries for all other metals for the MSs and MSDs were above the QC limits; therefore, the positive sample results for all other metals were flagged "J" as estimated.

In addition, the relative percent differences between the MS and MSD for zinc and copper were above the QC limit of 20 percent. No qualifications were warranted for zinc because the sample result was much higher than the spike level. However, positive sample results for copper were flagged "J" as estimated.

4.0 OVERALL ASSESSMENT OF DATA

Overall, the sample analytical data generated by GLA are acceptable for use as qualified.

ATTACHMENT

GLA SUMMARY OF ANALYTICAL RESULTS

(31 Sheets)



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

General Chemistry
Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-1 (B201120-01) Waste (L) Sampled: 01/08/02 17:00 Received: 01/10/02 10:00									
Flashpoint	>220 °F		°F	1	2010256	01/17/02	01/17/02	ASTM D93-85	
pH	7.14		pH Units	"	2010139	01/10/02	01/10/02	EPA 9040B	
D-2 (B201120-02) Waste (L) Sampled: 01/08/02 17:15 Received: 01/10/02 10:00									
Flashpoint	>220 °F		°F	1	2010256	01/17/02	01/17/02	ASTM D93-85	
pH	7.11		pH Units	"	2010139	01/10/02	01/10/02	EPA 9040B	
D-9B (B201120-03) Waste (L) Sampled: 01/09/02 14:45 Received: 01/10/02 10:00									
Flashpoint	161		°F	1	2010256	01/17/02	01/17/02	ASTM D93-85	
pH	6.67		pH Units	"	2010139	01/10/02	01/10/02	EPA 9040B	
T-4 (B201120-04) Waste (L) Sampled: 01/09/02 15:40 Received: 01/10/02 10:00									
Flashpoint	181		°F	1	2010256	01/17/02	01/17/02	ASTM D93-85	
pH	6.45		pH Units	"	2010139	01/10/02	01/10/02	EPA 9040B	
D-13 (B201120-05) Waste (L) Sampled: 01/09/02 15:45 Received: 01/10/02 10:00									
Flashpoint	>220 °F		°F	1	2010256	01/17/02	01/17/02	ASTM D93-85	
pH	6.83		pH Units	"	2010139	01/10/02	01/10/02	EPA 9040B	
D-12 (B201120-06) Waste (L) Sampled: 01/09/02 15:50 Received: 01/10/02 10:00									
Flashpoint	191		°F	1	2010256	01/17/02	01/17/02	ASTM D93-85	
pH	6.81		pH Units	"	2010139	01/10/02	01/10/02	EPA 9040B	
D-15 (B201120-07) Waste (L) Sampled: 01/09/02 16:05 Received: 01/10/02 10:00									
Flashpoint	171		°F	1	2010256	01/17/02	01/17/02	ASTM D93-85	
pH	6.50		pH Units	"	2010139	01/10/02	01/10/02	EPA 9040B	

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Total Metals by EPA 6000/7000 Series Methods

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-1 (B201120-01) Waste (L) Sampled: 01/08/02 17:00 Received: 01/10/02 10:00									
Mercury	0.000512 J	0.000200	mg/l	1	2010174	01/14/02	01/15/02	EPA 7470A	
Aluminum	ND	0.500	"	"	2010205	01/15/02	01/17/02	EPA 6010B	
Antimony	0.135 J	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	0.161 J	0.00500	"	"	"	"	"	"	
Calcium	31.0 J	0.500	"	"	"	"	"	"	
Chromium	ND	0.0100	"	"	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	ND	0.0500	"	"	"	"	"	"	
Iron	6.50 J	0.100	"	"	"	"	"	"	
Magnesium	ND	0.500	"	"	"	"	"	"	
Manganese	ND	0.0500	"	"	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	ND	0.500	"	"	"	"	"	"	
Selenium	ND	0.0500	"	"	"	"	"	"	
Silver	ND	0.0500	"	"	"	"	"	"	
Sodium	1.91 J	0.500	"	"	"	"	"	"	
Thallium	ND	0.100	"	"	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	300	5.50	"	11	"	"	"	"	
Lead	0.600 J	0.0500	"	1	"	"	01/17/02	EPA 7421	

QC

D-2 (B201120-02) Waste (L) Sampled: 01/08/02 17:15 Received: 01/10/02 10:00									
Mercury	ND	0.000200	mg/l	1	2010174	01/14/02	01/15/02	EPA 7470A	
Aluminum	ND	0.500	"	"	2010205	01/15/02	01/17/02	EPA 6010B	
Antimony	0.101 J	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	750 J	10.5	"	21	"	"	"	"	
Chromium	ND	0.0100	"	1	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	0.0853 J	0.0500	"	"	"	"	"	"	
Iron	7.91 J	0.100	"	"	"	"	"	"	
Magnesium	2.44 J	0.500	"	"	"	"	"	"	
Manganese	0.187 J	0.0500	"	"	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	4.68 J	0.500	"	"	"	"	"	"	
Selenium	ND	0.0500	"	"	"	"	"	"	

QC

Great Lakes Analytical

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Andy Johnson, Project Manager

2.8.

1-30-02



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Total Metals by EPA 6000/7000 Series Methods
Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-2 (B201120-02) Waste (L) Sampled: 01/08/02 17:15 Received: 01/10/02 10:00									
QC									
Silver	ND	0.0500	mg/l	1	2010205	01-15-02	01-17-02	EPA 6010B	
Sodium	7.46 J	0.500	"	"	"	"	"	"	
Thallium	ND	0.100	"	"	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	461 J	10.5	"	21	"	"	"	"	
Lead	0.0963 J	0.0500	"	1	"	"	01-17-02	EPA 7421	

D-9B (B201120-03) Waste (L) Sampled: 01/09/02 14:45 Received: 01/10/02 10:00									
QC									
Mercury	0.00104 J	0.000200	mg/l	1	2010174	01-14-02	01-15-02	EPA 7470A	
Aluminum	ND	0.500	"	"	2010205	01-15-02	01-17-02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	10.5 J	0.500	"	"	"	"	"	"	
Chromium	0.0491 J	0.0100	"	"	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	0.481 J	0.0500	"	"	"	"	"	"	
Iron	7.93 J	0.100	"	"	"	"	"	"	
Magnesium	19.4 J	0.500	"	"	"	"	"	"	
Manganese	ND	0.0500	"	"	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	5.25 J	0.500	"	"	"	"	"	"	
Selenium	0.0583 J	0.0500	"	"	"	"	"	"	
Silver	ND	0.0500	"	"	"	"	"	"	
Sodium	9.46 J	0.500	"	"	"	"	"	"	
Thallium	ND	0.100	"	"	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	45.8 J	0.500	"	"	"	"	"	"	
Lead	6.33 J	0.550	"	11	"	"	01-17-02	EPA 7421	

Great Lakes Analytical

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Andy Johnson, Project Manager



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200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01-18-02 10:23

Total Metals by EPA 6000/7000 Series Methods

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-4 (B201120-04) Waste (L) Sampled: 01/09/02 15:40 Received: 01/10/02 10:00									
QC									
Mercury	ND	0.000200	mg/l	1	2010174	01-14-02	01-15-02	EPA 7470A	
Aluminum	ND	0.500	"	"	2010205	01-15-02	01-17-02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	ND	0.500	"	"	"	"	"	"	
Chromium	ND	0.0100	"	"	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	0.0745 J	0.0500	"	"	"	"	"	"	
Iron	ND	0.100	"	"	"	"	"	"	
Magnesium	ND	0.500	"	"	"	"	"	"	
Manganese	ND	0.0500	"	"	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	3.61 J	0.500	"	"	"	"	"	"	
Selenium	ND	0.0500	"	"	"	"	"	"	
Silver	ND	0.0500	"	"	"	"	"	"	
Sodium	0.731 J	0.500	"	"	"	"	"	"	
Thallium	ND	0.100	"	"	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	1.39 J	0.500	"	"	"	"	"	"	
Lead	ND	0.0500	µg/l	"	"	"	01-17-02	EPA 7421	

D-13 (B201120-05) Waste (L) Sampled: 01/09/02 15:45 Received: 01/10/02 10:00

QC

Mercury	ND	0.000200	mg/l	1	2010174	01-14-02	01-15-02	EPA 7470A	
Aluminum	0.547 J	0.500	"	"	2010205	01-15-02	01-17-02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	1420 J	25.5	"	51	"	"	"	"	
Chromium	ND	0.0100	"	1	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	0.343 J	0.0500	"	"	"	"	"	"	
Iron	ND	0.100	"	"	"	"	"	"	
Magnesium	4.21 J	0.500	"	"	"	"	"	"	
Manganese	0.122 J	0.0500	"	"	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	8.34 J	0.500	"	"	"	"	"	"	
Selenium	ND	0.0500	"	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager

Page 5 of 32



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Total Metals by EPA 6000/7000 Series Methods

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-13 (B201120-05) Waste (L) Sampled: 01/09/02 15:45 Received: 01/10/02 10:00									
QC									
Silver	ND	0.0500	mg/l	1	2010205	01:15:02	01:17:02	EPA 6010B	
Sodium	18.0 J	0.500	"	"	"	"	"	"	
Thallium	0.116 J	0.100	"	"	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	593 J	25.5	"	51	"	"	"	"	
Lead	0.115 J	0.0500	"	1	"	"	01:17:02	EPA 7421	

D-12 (B201120-06) Waste (L) Sampled: 01/09/02 15:50 Received: 01/10/02 10:00									
QC									
Mercury	ND	0.000200	mg/l	1	2010174	01:14:02	01:15:02	EPA 7470A	
Aluminum	ND	0.500	"	"	2010205	01:15:02	01:17:02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	0.114 J	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	3.66 J	0.500	"	"	"	"	"	"	
Chromium	0.0534 J	0.0100	"	"	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	0.616 J	0.0500	"	"	"	"	"	"	
Iron	ND	0.100	"	"	"	"	"	"	
Magnesium	ND	0.500	"	"	"	"	"	"	
Manganese	ND	0.0500	"	"	"	"	"	"	
Nickel	0.0660 J	0.0500	"	"	"	"	"	"	
Potassium	ND	0.500	"	"	"	"	"	"	
Selenium	ND	0.0500	"	"	"	"	"	"	
Silver	ND	0.0500	"	"	"	"	"	"	
Sodium	3.95 J	0.500	"	"	"	"	"	"	
Thallium	ND	0.100	"	"	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	5.80 J	0.500	"	"	"	"	"	"	
Lead	ND	0.0500 J	"	"	"	"	01:17:02	EPA 7421	

Great Lakes Analytical

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Andy Johnson, Project Manager

1-30-02



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Tetra Tech EMI - IL
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Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01-18-02 10:23

Total Metals by EPA 6000/7000 Series Methods Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-15 (B201120-07) Waste (L) Sampled: 01/09/02 16:05 Received: 01/10/02 10:00									QC
Mercury	ND	0.000200	mg/l	1	2010174	01-14-02	01-15-02	EPA 7470A	
Aluminum	ND	5.50	"	11	2010205	01-15-02	01-17-02	EPA 6010B	
Antimony	ND	1.10	"	"	"	"	"	"	
Arsenic	ND	0.550	"	"	"	"	"	"	
Barium	ND	5.50	"	"	"	"	"	"	
Beryllium	ND	0.110	"	"	"	"	"	"	
Cadmium	ND	0.0550	"	"	"	"	"	"	
Calcium	32.7 J	5.50	"	"	"	"	"	"	
Chromium	ND	0.110	"	"	"	"	"	"	
Cobalt	ND	0.550	"	"	"	"	"	"	
Copper	ND	0.550	"	"	"	"	"	"	
Iron	ND	1.10	"	"	"	"	"	"	
Magnesium	ND	5.50	"	"	"	"	"	"	
Manganese	ND	0.550	"	"	"	"	"	"	
Nickel	ND	0.550	"	"	"	"	"	"	
Potassium	66.3 J	5.50	"	"	"	"	"	"	
Selenium	ND	0.550	"	"	"	"	"	"	
Silver	ND	0.550	"	"	"	"	"	"	
Sodium	ND	5.50	"	"	"	"	"	"	
Thallium	1.59 J	1.10	"	"	"	"	"	"	
Vanadium	ND	0.495	"	"	"	"	"	"	
Zinc	56.3 J	5.50	"	"	"	"	"	"	
Lead	ND	0.0500 UJ	"	1	"	"	01-17-02	EPA 7421	

Great Lakes Analytical

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Andy Johnson, Project Manager

L.J.

1-30-02



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Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-1 (B201120-01) Waste (L) Sampled: 01/08/02 17:00 Received: 01/10/02 10:00									
QC									
Acetone	ND	500	ug kg	50	2010245	01 16 02	01 16 02	5030B 8260B	
Benzene	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
2-Butanone	ND	500	"	"	"	"	"	"	
Carbon disulfide	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Chlorodibromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
2-Hexanone	ND	500	"	"	"	"	"	"	
Methylene chloride	ND	100	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	ND	100	"	"	"	"	"	"	
Toluene	1860 J	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
Trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
Vinyl acetate	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Total Xylenes	384 J	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		78.0 %	91.1-111	"	"	"	"	"	04
Surrogate: 1,2-Dichloroethane-d4		112 %	85.1-104	"	"	"	"	"	05
Surrogate: Toluene-d8		97.2 %	95.1-105	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		136 %	89.6-105	"	"	"	"	"	05

Great Lakes Analytical

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Andy Johnson, Project Manager

L.B.

1-30-02



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Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Volatile Organic Compounds by EPA Method 8260B Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-2 (B201120-02) Waste (L) Sampled: 01/08/02 17:15 Received: 01/10/02 10:00									QC
Acetone	ND	500	ug/kg	50	2010245	01/16/02	01/16/02	5030B 8260B	
Benzene	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
2-Butanone	ND	500	"	"	"	"	"	"	
Carbon disulfide	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Chlorodibromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Ethylbenzene	162 J	100	"	"	"	"	"	"	
2-Hexanone	ND	500	"	"	"	"	"	"	
Methylene chloride	ND	100	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	ND	100	"	"	"	"	"	"	
Toluene	4690 J	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
Trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
Vinyl acetate	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Total Xylenes	892 J	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		75.4 %	91.1-111	"	"	"	"	"	04
Surrogate: 1,2-Dichloroethane-d4		111 %	85.1-104	"	"	"	"	"	05
Surrogate: Toluene-d8		97.6 %	95.1-105	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		129 %	89.6-105	"	"	"	"	"	05

Great Lakes Analytical

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Andy Johnson, Project Manager

2. J.
1-30-02



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Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01-18-02 10:23

Volatile Organic Compounds by EPA Method 8260B
Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-9B (B201120-03) Waste (L) Sampled: 01/09/02 14:45 Received: 01/10/02 10:00 QC									
Acetone	ND	1000	ug kg	100	2010245	01 16 02	01 16 02	5030B 8260B	
Benzene	2510 J	200	"	"	"	"	"	"	
Bromodichloromethane	ND	200	"	"	"	"	"	"	
Bromoform	ND	200	"	"	"	"	"	"	
Bromomethane	ND	200	"	"	"	"	"	"	
2-Butanone	ND	1000	"	"	"	"	"	"	
Carbon disulfide	ND	200	"	"	"	"	"	"	
Carbon tetrachloride	ND	200	"	"	"	"	"	"	
Chlorobenzene	ND	200	"	"	"	"	"	"	
Chlorodibromomethane	ND	200	"	"	"	"	"	"	
Chloroethane	ND	200	"	"	"	"	"	"	
Chloroform	ND	200	"	"	"	"	"	"	
Chloromethane	ND	200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	200	"	"	"	"	"	"	
Ethylbenzene	13400 J	200	"	"	"	"	"	"	
2-Hexanone	ND	1000	"	"	"	"	"	"	
Methylene chloride	ND	200	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	1000	"	"	"	"	"	"	
Styrene	ND	200	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	200	"	"	"	"	"	"	
Tetrachloroethene	ND	200	"	"	"	"	"	"	
Toluene	19600 J	200	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	200	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	200	"	"	"	"	"	"	
Trichloroethene	ND	200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	200	"	"	"	"	"	"	
Vinyl acetate	ND	200	"	"	"	"	"	"	
Vinyl chloride	ND	200	"	"	"	"	"	"	
Total Xylenes	53000 J	200	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		80.0 %	91.1-111	"	"	"	"	"	04
Surrogate: 1,2-Dichloroethane-d4		113 %	85.1-104	"	"	"	"	"	05
Surrogate: Toluene-d8		98.0 %	95.1-105	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	89.6-105	"	"	"	"	"	05

Great Lakes Analytical

Andy Johnson, Project Manager

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J.B.
1-30-02



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Tetra Tech EMI - IL
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Chicago IL. 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-4 (B201120-04) Waste (L) Sampled: 01/09/02 15:40 Received: 01/10/02 10:00									QC
Acetone	ND	10000	ug/kg	1000	2010245	01/16/02	01/16/02	5030B 8260B	
Benzene	ND	2000	"	"	"	"	"	"	
Bromodichloromethane	ND	2000	"	"	"	"	"	"	
Bromoform	ND	2000	"	"	"	"	"	"	
Bromomethane	ND	2000	"	"	"	"	"	"	
2-Butanone	ND	10000	"	"	"	"	"	"	
Carbon disulfide	ND	2000	"	"	"	"	"	"	
Carbon tetrachloride	ND	2000	"	"	"	"	"	"	
Chlorobenzene	ND	2000	"	"	"	"	"	"	
Chlorodibromomethane	ND	2000	"	"	"	"	"	"	
Chloroethane	ND	2000	"	"	"	"	"	"	
Chloroform	ND	2000	"	"	"	"	"	"	
Chloromethane	ND	2000	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2000	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2000	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2000	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2000	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2000	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2000	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2000	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2000	"	"	"	"	"	"	
Ethylbenzene	53000 J	2000	"	"	"	"	"	"	
2-Hexanone	ND	10000	"	"	"	"	"	"	
Methylene chloride	ND	2000	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10000	"	"	"	"	"	"	
Styrene	ND	2000	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2000	"	"	"	"	"	"	
Tetrachloroethene	ND	2000	"	"	"	"	"	"	
Toluene	47200 J	2000	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2000	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2000	"	"	"	"	"	"	
Trichloroethene	ND	2000	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2000	"	"	"	"	"	"	
Vinyl acetate	ND	2000	"	"	"	"	"	"	
Vinyl chloride	ND	2000	"	"	"	"	"	"	
Total Xylenes	348000 J	2000	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		75.0 %	91.1-111	"	"	"	"	"	04
Surrogate: 1,2-Dichloroethane-d4		113 %	85.1-104	"	"	"	"	"	05
Surrogate: Toluene-d8		97.0 %	95.1-105	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		125 %	89.6-105	"	"	"	"	"	05

Great Lakes Analytical

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Andy Johnson, Project Manager

2.8
1-30-02



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-13 (B201120-05) Waste (L) Sampled: 01/09/02 15:45 Received: 01/10/02 10:00 QC									
Acetone	ND	500	ug/kg	50	2010245	01-16-02	01-16-02	5030B 8260B	
Benzene	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
2-Butanone	ND	500	"	"	"	"	"	"	
Carbon disulfide	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Chlorodibromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Ethylbenzene	360 J	100	"	"	"	"	"	"	
2-Hexanone	ND	500	"	"	"	"	"	"	
Methylene chloride	ND	100	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	ND	100	"	"	"	"	"	"	
Toluene	10900 J	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
Trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
Vinyl acetate	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Total Xylenes	1930 J	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		78.2 %	91.1-111	"	"	"	"	"	04
Surrogate: 1,2-Dichloroethane-d4		111 %	85.1-104	"	"	"	"	"	05
Surrogate: Toluene-d8		96.6 %	95.1-105	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		127 %	89.6-105	"	"	"	"	"	05

Great Lakes Analytical

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Andy Johnson, Project Manager

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1-30-02

Page 12 of 32



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Tetra Tech EMI - IL
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Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-12 (B201120-06) Waste (L) Sampled: 01/09/02 15:50 Received: 01/10/02 10:00									QC
Acetone	ND	2500	ug/kg	250	2010245	01-16-02	01-16-02	5030B 8260B	
Benzene	ND	500	"	"	"	"	"	"	
Bromodichloromethane	ND	500	"	"	"	"	"	"	
Bromoform	ND	500	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
2-Butanone	ND	2500	"	"	"	"	"	"	
Carbon disulfide	ND	500	"	"	"	"	"	"	
Carbon tetrachloride	ND	500	"	"	"	"	"	"	
Chlorobenzene	ND	500	"	"	"	"	"	"	
Chlorodibromomethane	ND	500	"	"	"	"	"	"	
Chloroethane	ND	500	"	"	"	"	"	"	
Chloroform	ND	500	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	500	"	"	"	"	"	"	
1,2-Dichloroethane	ND	500	"	"	"	"	"	"	
1,1-Dichloroethene	ND	500	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	500	"	"	"	"	"	"	
1,2-Dichloropropane	ND	500	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	500	"	"	"	"	"	"	
Ethylbenzene	ND	500	"	"	"	"	"	"	
2-Hexanone	ND	2500	"	"	"	"	"	"	
Methylene chloride	ND	500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2500	"	"	"	"	"	"	
Styrene	ND	500	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	500	"	"	"	"	"	"	
Tetrachloroethene	ND	500	"	"	"	"	"	"	
Toluene	66700 J	500	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	500	"	"	"	"	"	"	
Trichloroethene	ND	500	"	"	"	"	"	"	
Trichlorofluoromethane	ND	500	"	"	"	"	"	"	
Vinyl acetate	ND	500	"	"	"	"	"	"	
Vinyl chloride	ND	500	"	"	"	"	"	"	
Total Xylenes	4450 J	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		78.4 %	91.1-111	"	"	"	"	"	04
Surrogate: 1,2-Dichloroethane-d4		112 %	85.1-104	"	"	"	"	"	05
Surrogate: Toluene-d8		98.6 %	95.1-105	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		121 %	89.6-105	"	"	"	"	"	05

Great Lakes Analytical

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Andy Johnson, Project Manager

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1-30-02



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Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01-18-02 10:23

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-15 (B201120-07) Waste (L) Sampled: 01/09/02 16:05 Received: 01/10/02 10:00									QC
Acetone	ND	500	ug/kg	50	2010245	01 16 02	01 16 02	5030B-8260B	
Benzene	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	100	"	"	"	"	"	"	
2-Butanone	ND	500	"	"	"	"	"	"	
Carbon disulfide	ND	100	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Chlorodibromomethane	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Ethylbenzene	ND	100	"	"	"	"	"	"	
2-Hexanone	ND	500	"	"	"	"	"	"	
Methylene chloride	ND	100	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
Trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
Vinyl acetate	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Total Xylenes	ND	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		76.8 %	91.1-111	"	"	"	"	"	04
Surrogate: 1,2-Dichloroethane-d4		112 %	85.1-104	"	"	"	"	"	05
Surrogate: Toluene-d8		97.6 %	95.1-105	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		125 %	89.6-105	"	"	"	"	"	05

Great Lakes Analytical

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Andy Johnson, Project Manager



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Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
(B201120-01) Waste (L) Sampled: 01/08/02 17:00 Received: 01/10/02 10:00									O2
naphthene	ND	30000	ug/kg	1	2010168	01-11-02	01-11-02	EPA 8270C	
naphthylene	ND	30000	"	"	"	"	"	"	
iline	ND	30000	"	"	"	"	"	"	
thracene	ND	30000	"	"	"	"	"	"	
nzoic acid	ND	150000	"	"	"	"	"	"	
nz (a) anthracene	ND	30000	"	"	"	"	"	"	
nzo (a) pyrene	ND	30000	"	"	"	"	"	"	
nzo (b) fluoranthene	ND	30000	"	"	"	"	"	"	
nzo (ghi) perylene	ND	30000	"	"	"	"	"	"	
nzo (k) fluoranthene	ND	30000	"	"	"	"	"	"	
nzyl alcohol	ND	30000	"	"	"	"	"	"	
s(2-chloroethoxy)methane	ND	30000	"	"	"	"	"	"	
s(2-chloroethyl)ether	ND	30000	"	"	"	"	"	"	
s(2-chloroisopropyl)ether	ND	30000	"	"	"	"	"	"	
s(2-ethylhexyl)phthalate	ND	99000	"	"	"	"	"	"	
Bromophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
tyl benzyl phthalate	ND	30000	"	"	"	"	"	"	
Chloroaniline	ND	30000	"	"	"	"	"	"	
Chloro-3-methylphenol	ND	30000	"	"	"	"	"	"	
Chloronaphthalene	ND	30000	"	"	"	"	"	"	
Chlorophenol	ND	30000	"	"	"	"	"	"	
Chlorophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
hrysene	ND	30000	"	"	"	"	"	"	
ibenz (a,h) anthracene	ND	30000	"	"	"	"	"	"	
ibenzofuran	ND	30000	"	"	"	"	"	"	
.2-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
.3-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
.4-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
.3'-Dichlorobenzidine	ND	150000	"	"	"	"	"	"	
.4-Dichlorophenol	ND	30000	"	"	"	"	"	"	
Diethyl phthalate	ND	30000	"	"	"	"	"	"	
.4-Dimethylphenol	ND	30000	"	"	"	"	"	"	
Dimethyl phthalate	ND	30000	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	99000	"	"	"	"	"	"	
1,6-Dinitro-2-methylphenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	30000	"	"	"	"	"	"	
Fluoranthene	ND	30000	"	"	"	"	"	"	
Fluorene	ND	30000	"	"	"	"	"	"	
Hexachlorobenzene	ND	30000	"	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager



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Chicago IL. 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-1 (B201120-01) Waste (L) Sampled: 01/08/02 17:00 Received: 01/10/02 10:00									O2
Hexachlorobutadiene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	30000	"	"	"	"	"	"	
Hexachloroethane	ND	30000	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	30000	"	"	"	"	"	"	
Isophorone	ND	30000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	30000	"	"	"	"	"	"	
o-Cresol	ND	30000	"	"	"	"	"	"	
m,p-Cresols	ND	30000	"	"	"	"	"	"	
hthalene	ND	30000	"	"	"	"	"	"	
2-Nitroaniline	ND	150000	"	"	"	"	"	"	
3-Nitroaniline	ND	150000	"	"	"	"	"	"	
4-Nitroaniline	ND	150000	"	"	"	"	"	"	
Nitrobenzene	ND	30000	"	"	"	"	"	"	
2-Nitrophenol	ND	30000	"	"	"	"	"	"	
4-Nitrophenol	ND	150000	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	30000	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	30000	"	"	"	"	"	"	
Pentachlorophenol	ND	150000	"	"	"	"	"	"	
Phenanthrene	ND	30000	"	"	"	"	"	"	
Phenol	ND	30000	"	"	"	"	"	"	
Pyrene	ND	30000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	30000	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	150000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	30000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		90.0 %	50-130	"	"	"	"	"	
Surrogate: Phenol-d6		88.1 %	50-130	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		84.5 %	50-130	"	"	"	"	"	
Surrogate: 2-Fluorobiphenyl		96.3 %	50-130	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		123 %	50-130	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		130 %	50-130	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager

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Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-2 (B201120-02) Waste (L) Sampled: 01/08/02 17:15 Received: 01/10/02 10:00									O2
Acenaphthene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
Acenaphthylene	ND	30000	"	"	"	"	"	"	
Aniline	ND	30000	"	"	"	"	"	"	
Anthracene	ND	30000	"	"	"	"	"	"	
Benzoic acid	ND	150000	"	"	"	"	"	"	
Benz (a) anthracene	ND	30000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	30000	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	30000	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzyl alcohol	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	99000	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Butyl benzyl phthalate	2990000	600000	"	20	"	"	01/15/02	"	
4-Chloroaniline	ND	30000	"	1	"	"	01/11/02	"	
4-Chloro-3-methylphenol	ND	30000	"	"	"	"	"	"	
2-Chloronaphthalene	ND	30000	"	"	"	"	"	"	
2-Chlorophenol	ND	30000	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Chrysene	ND	30000	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	30000	"	"	"	"	"	"	
Dibenzofuran	ND	30000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	150000	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	30000	"	"	"	"	"	"	
Diethyl phthalate	ND	30000	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	30000	"	"	"	"	"	"	
Dimethyl phthalate	ND	30000	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	99000	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	30000	"	"	"	"	"	"	
Fluoranthene	ND	30000	"	"	"	"	"	"	
Fluorene	ND	30000	"	"	"	"	"	"	
Hexachlorobenzene	ND	30000	"	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-2 (B201120-02) Waste (L) Sampled: 01/08/02 17:15 Received: 01/10/02 10:00									O2
Hexachlorobutadiene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	30000	"	"	"	"	"	"	
Hexachloroethane	ND	30000	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	30000	"	"	"	"	"	"	
Isophorone	ND	30000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	30000	"	"	"	"	"	"	
o-Cresol	ND	30000	"	"	"	"	"	"	
m,p-Cresols	ND	30000	"	"	"	"	"	"	
naphthalene	ND	30000	"	"	"	"	"	"	
2-Nitroaniline	ND	150000	"	"	"	"	"	"	
3-Nitroaniline	ND	150000	"	"	"	"	"	"	
4-Nitroaniline	ND	150000	"	"	"	"	"	"	
Nitrobenzene	ND	30000	"	"	"	"	"	"	
2-Nitrophenol	ND	30000	"	"	"	"	"	"	
4-Nitrophenol	ND	150000	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	30000	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	30000	"	"	"	"	"	"	
Pentachlorophenol	ND	150000	"	"	"	"	"	"	
Phenanthrene	ND	30000	"	"	"	"	"	"	
Phenol	ND	30000	"	"	"	"	"	"	
Pyrene	ND	30000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	30000	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	150000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	30000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		74.9 %	50-130	"	"	"	"	"	
Surrogate: Phenol-d6		77.4 %	50-130	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		75.2 %	50-130	"	"	"	"	"	
Surrogate: 2-Fluorobiphenyl		82.0 %	50-130	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		111 %	50-130	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		142 %	50-130	"	"	"	"	"	O5

Great Lakes Analytical

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Andy Johnson, Project Manager



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tra Tech EMI - IL
0 E. Randolph Suite 4700
icago IL. 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Sample	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
B (B201120-03) Waste (L) Sampled: 01/09/02 14:45 Received: 01/10/02 10:00									O2
naphthene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
naphthylene	ND	30000	"	"	"	"	"	"	
line	ND	30000	"	"	"	"	"	"	
hracene	ND	30000	"	"	"	"	"	"	
zoic acid	ND	150000	"	"	"	"	"	"	
12 (a) anthracene	ND	30000	"	"	"	"	"	"	
120 (a) pyrene	ND	30000	"	"	"	"	"	"	
120 (b) fluoranthene	ND	30000	"	"	"	"	"	"	
120 (ghi) perylene	ND	30000	"	"	"	"	"	"	
120 (k) fluoranthene	ND	30000	"	"	"	"	"	"	
12yl alcohol	ND	30000	"	"	"	"	"	"	
12-chloroethoxy)methane	ND	30000	"	"	"	"	"	"	
12-chloroethyl)ether	ND	30000	"	"	"	"	"	"	
12-chloroisopropyl)ether	ND	30000	"	"	"	"	"	"	
12-ethylhexyl)phthalate	ND	99000	"	"	"	"	"	"	
3romophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
tyl benzyl phthalate	ND	30000	"	"	"	"	"	"	
Chloroaniline	ND	30000	"	"	"	"	"	"	
Chloro-3-methylphenol	ND	30000	"	"	"	"	"	"	
Chloronaphthalene	ND	30000	"	"	"	"	"	"	
Chlorophenol	ND	30000	"	"	"	"	"	"	
Chlorophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
rysene	ND	30000	"	"	"	"	"	"	
benz (a,h) anthracene	ND	30000	"	"	"	"	"	"	
benzofuran	ND	30000	"	"	"	"	"	"	
2-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
3-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
4-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
3'-Dichlorobenzidine	ND	150000	"	"	"	"	"	"	
4-Dichlorophenol	ND	30000	"	"	"	"	"	"	
1ethyl phthalate	ND	30000	"	"	"	"	"	"	
4-Dimethylphenol	ND	30000	"	"	"	"	"	"	
1imethyl phthalate	ND	30000	"	"	"	"	"	"	
1-n-butyl phthalate	ND	99000	"	"	"	"	"	"	
6-Dinitro-2-methylphenol	ND	150000	"	"	"	"	"	"	
4-Dinitrophenol	ND	150000	"	"	"	"	"	"	
4-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
6-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
1-n-octyl phthalate	ND	30000	"	"	"	"	"	"	
uoranthene	ND	30000	"	"	"	"	"	"	
uorene	ND	30000	"	"	"	"	"	"	
exachlorobenzene	ND	30000	"	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager

1380 Busch Parkway
Buffalo Grove, Illinois 60089Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa GraczykReported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-9B (B201120-03) Waste (L) Sampled: 01/09/02 14:45 Received: 01/10/02 10:00									
O2									
Hexachlorobutadiene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	30000	"	"	"	"	"	"	
Hexachloroethane	ND	30000	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	30000	"	"	"	"	"	"	
Isophorone	ND	30000	"	"	"	"	"	"	
2-Methylnaphthalene	202000	30000	"	"	"	"	"	"	
o-Cresol	ND	30000	"	"	"	"	"	"	
m,p-Cresols	ND	30000	"	"	"	"	"	"	
naphthalene	53000	30000	"	"	"	"	"	"	
2-Nitroaniline	ND	150000	"	"	"	"	"	"	
3-Nitroaniline	ND	150000	"	"	"	"	"	"	
4-Nitroaniline	ND	150000	"	"	"	"	"	"	
Nitrobenzene	ND	30000	"	"	"	"	"	"	
2-Nitrophenol	ND	30000	"	"	"	"	"	"	
4-Nitrophenol	ND	150000	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	30000	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	30000	"	"	"	"	"	"	
Pentachlorophenol	ND	150000	"	"	"	"	"	"	
Phenanthrene	59200	30000	"	"	"	"	"	"	
Phenol	ND	30000	"	"	"	"	"	"	
Pyrene	ND	30000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	30000	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	150000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	30000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		72.6 %	50-130		"	"	"	"	
Surrogate: Phenol-d6		71.7 %	50-130		"	"	"	"	
Surrogate: Nitrobenzene-d5		76.3 %	50-130		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		72.9 %	50-130		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		107 %	50-130		"	"	"	"	
Surrogate: p-Terphenyl-d14		136 %	50-130		"	"	"	"	
O5									

Great Lakes Analytical

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Andy Johnson, Project Manager



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Terra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C
Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-4 (B201120-04) Waste (L) Sampled: 01/09/02 15:40 Received: 01/10/02 10:00									O2
Acenaphthene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
Acenaphthylene	ND	30000	"	"	"	"	"	"	
Aniline	ND	30000	"	"	"	"	"	"	
Anthracene	67400 J	30000	"	"	"	"	"	"	
Benzoic acid	ND	150000	"	"	"	"	"	"	
Benz (a) anthracene	ND	30000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	30000	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	30000	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzyl alcohol	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	99000	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	30000	"	"	"	"	"	"	
4-Chloroaniline	ND	30000	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	30000	"	"	"	"	"	"	
2-Chloronaphthalene	ND	30000	"	"	"	"	"	"	
2-Chlorophenol	ND	30000	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Chrysene	ND	30000	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	30000	"	"	"	"	"	"	
Dibenzofuran	ND	30000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	150000	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	30000	"	"	"	"	"	"	
Diethyl phthalate	ND	30000	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	30000	"	"	"	"	"	"	
Dimethyl phthalate	ND	30000	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	99000	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	30000	"	"	"	"	"	"	
Fluoranthene	ND	30000	"	"	"	"	"	"	
Fluorene	227000 J	30000	"	"	"	"	"	"	
Hexachlorobenzene	ND	30000	"	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager

1380 Busch Parkway
Buffalo Grove, Illinois 60089Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa GraczykReported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-4 (B201120-04) Waste (L) Sampled: 01/09/02 15:40 Received: 01/10/02 10:00									
O2									
Hexachlorobutadiene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	30000	"	"	"	"	"	"	
Hexachloroethane	ND	30000	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	30000	"	"	"	"	"	"	
Isophorone	ND	30000	"	"	"	"	"	"	
2-Methylnaphthalene	6020000 J	300000	"	10	"	"	01/15/02	"	
o-Cresol	ND	30000	"	1	"	"	01/11/02	"	
m,p-Cresols	ND	30000	"	"	"	"	"	"	
phthalene	2080000 J	300000	"	10	"	"	01/15/02	"	
2-Nitroaniline	ND	150000	"	1	"	"	01/11/02	"	
3-Nitroaniline	ND	150000	"	"	"	"	"	"	
4-Nitroaniline	ND	150000	"	"	"	"	"	"	
Nitrobenzene	ND	30000	"	"	"	"	"	"	
2-Nitrophenol	ND	30000	"	"	"	"	"	"	
4-Nitrophenol	ND	150000	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	30000	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	30000	"	"	"	"	"	"	
Pentachlorophenol	ND	150000	"	"	"	"	"	"	
Phenanthrene	939000 J	30000	"	"	"	"	"	"	
Phenol	ND	30000	"	"	"	"	"	"	
Pyrene	397000 J	30000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	30000	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	150000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	30000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		78.4 %	50-130	"	"	"	"	"	
Surrogate: Phenol-d6		86.9 %	50-130	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		185 %	50-130	"	"	"	"	"	O5
Surrogate: 2-Fluorobiphenyl		76.0 %	50-130	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		88.0 %	50-130	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		264 %	50-130	"	"	"	"	"	O5

Great Lakes Analytical

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Andy Johnson, Project Manager

L.Y.
1-30-02

Page 25 of 32



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-13 (B201120-05) Waste (L) Sampled: 01/09/02 15:45 Received: 01/10/02 10:00									O2
Acenaphthene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
Acenaphthylene	ND	30000	"	"	"	"	"	"	
Aniline	ND	30000	"	"	"	"	"	"	
Anthracene	ND	30000	"	"	"	"	"	"	
Benzoic acid	ND	150000	"	"	"	"	"	"	
Benz (a) anthracene	ND	30000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	30000	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	30000	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzyl alcohol	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	99000	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Butyl benzyl phthalate	2930000	600000	"	20	"	"	01/15/02	"	
4-Chloroaniline	ND	30000	"	1	"	"	01/11/02	"	
4-Chloro-3-methylphenol	ND	30000	"	"	"	"	"	"	
2-Chloronaphthalene	ND	30000	"	"	"	"	"	"	
2-Chlorophenol	ND	30000	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Chrysene	ND	30000	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	30000	"	"	"	"	"	"	
Dibenzofuran	ND	30000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	150000	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	30000	"	"	"	"	"	"	
Diethyl phthalate	ND	30000	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	30000	"	"	"	"	"	"	
Dimethyl phthalate	ND	30000	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	99000	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	30000	"	"	"	"	"	"	
Fluoranthene	ND	30000	"	"	"	"	"	"	
Fluorene	ND	30000	"	"	"	"	"	"	
Hexachlorobenzene	ND	30000	"	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-13 (B201120-05) Waste (L) Sampled: 01/09/02 15:45 Received: 01/10/02 10:00									O2
Hexachlorobutadiene	ND	30000	ug/kg	1	2010168	01/11/02	01/11/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	30000	"	"	"	"	"	"	
Hexachloroethane	ND	30000	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	30000	"	"	"	"	"	"	
Isophorone	ND	30000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	30000	"	"	"	"	"	"	
o-Cresol	ND	30000	"	"	"	"	"	"	
m,p-Cresols	ND	30000	"	"	"	"	"	"	
Phthalene	ND	30000	"	"	"	"	"	"	
2-Nitroaniline	ND	150000	"	"	"	"	"	"	
3-Nitroaniline	ND	150000	"	"	"	"	"	"	
4-Nitroaniline	ND	150000	"	"	"	"	"	"	
Nitrobenzene	ND	30000	"	"	"	"	"	"	
2-Nitrophenol	ND	30000	"	"	"	"	"	"	
4-Nitrophenol	ND	150000	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	30000	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	30000	"	"	"	"	"	"	
Pentachlorophenol	ND	150000	"	"	"	"	"	"	
Phenanthrene	ND	30000	"	"	"	"	"	"	
Phenol	ND	30000	"	"	"	"	"	"	
Pyrene	ND	30000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	30000	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	150000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	30000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol	78.4 %	50-130			"	"	"	"	
Surrogate: Phenol-d6	80.5 %	50-130			"	"	"	"	
Surrogate: Nitrobenzene-d5	78.2 %	50-130			"	"	"	"	
Surrogate: 2-Fluorobiphenyl	88.6 %	50-130			"	"	"	"	
Surrogate: 2,4,6-Tribromophenol	89.0 %	50-130			"	"	"	"	
Surrogate: p-Terphenyl-d14	146 %	50-130			"	"	"	"	O5

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-12 (B201120-06) Waste (L) Sampled: 01/09/02 15:50 Received: 01/10/02 10:00									O2
Acenaphthene	ND	30000	ug/kg	1	2010168	01/11/02	01/12/02	EPA 8270C	
Acenaphthylene	ND	30000	"	"	"	"	"	"	
Aniline	ND	30000	"	"	"	"	"	"	
Anthracene	ND	30000	"	"	"	"	"	"	
Benzoic acid	ND	150000	"	"	"	"	"	"	
Benz (a) anthracene	ND	30000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	30000	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	30000	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzyl alcohol	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	99000	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	30000	"	"	"	"	"	"	
4-Chloroaniline	ND	30000	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	30000	"	"	"	"	"	"	
2-Chloronaphthalene	ND	30000	"	"	"	"	"	"	
2-Chlorophenol	ND	30000	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Chrysene	ND	30000	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	30000	"	"	"	"	"	"	
Dibenzofuran	ND	30000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	150000	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	30000	"	"	"	"	"	"	
Diethyl phthalate	ND	30000	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	30000	"	"	"	"	"	"	
Dimethyl phthalate	ND	30000	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	99000	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	30000	"	"	"	"	"	"	
Fluoranthene	ND	30000	"	"	"	"	"	"	
Fluorene	ND	30000	"	"	"	"	"	"	
Hexachlorobenzene	ND	30000	"	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-12 (B201120-06) Waste (L) Sampled: 01/09/02 15:50 Received: 01/10/02 10:00									O2
Hexachlorobutadiene	ND	30000	ug/kg	1	2010168	01/11/02	01/12/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	30000	"	"	"	"	"	"	
Hexachloroethane	ND	30000	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	30000	"	"	"	"	"	"	
Isophorone	ND	30000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	30000	"	"	"	"	"	"	
o-Cresol	ND	30000	"	"	"	"	"	"	
m,p-Cresols	ND	30000	"	"	"	"	"	"	
phthalene	ND	30000	"	"	"	"	"	"	
2-Nitroaniline	ND	150000	"	"	"	"	"	"	
3-Nitroaniline	ND	150000	"	"	"	"	"	"	
4-Nitroaniline	ND	150000	"	"	"	"	"	"	
Nitrobenzene	ND	30000	"	"	"	"	"	"	
2-Nitrophenol	ND	30000	"	"	"	"	"	"	
4-Nitrophenol	ND	150000	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	30000	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	30000	"	"	"	"	"	"	
Pentachlorophenol	ND	150000	"	"	"	"	"	"	
Phenanthrene	ND	30000	"	"	"	"	"	"	
Phenol	ND	30000	"	"	"	"	"	"	
Pyrene	ND	30000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	30000	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	150000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	30000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		71.3 %	50-130	"	"	"	"	"	
Surrogate: Phenol-d6		73.7 %	50-130	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		75.7 %	50-130	"	"	"	"	"	
Surrogate: 2-Fluorobiphenyl		81.8 %	50-130	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		117 %	50-130	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		126 %	50-130	"	"	"	"	"	

Great Lakes Analytical

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Terra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C
Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-15 (B201120-07) Waste (L) Sampled: 01/09/02 16:05 Received: 01/10/02 10:00									02
Acenaphthene	ND	30000	ug/kg	1	2010168	01/11/02	01/12/02	EPA 8270C	
Acenaphthylene	ND	30000	"	"	"	"	"	"	
Aniline	ND	30000	"	"	"	"	"	"	
Anthracene	ND	30000	"	"	"	"	"	"	
Benzoic acid	ND	150000	"	"	"	"	"	"	
Benz (a) anthracene	ND	30000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	30000	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	30000	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	30000	"	"	"	"	"	"	
Benzyl alcohol	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	30000	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	30000	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	99000	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Buryl benzyl phthalate	ND	30000	"	"	"	"	"	"	
4-Chloroaniline	ND	30000	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	30000	"	"	"	"	"	"	
2-Chloronaphthalene	ND	30000	"	"	"	"	"	"	
2-Chlorophenol	ND	30000	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	30000	"	"	"	"	"	"	
Chrysene	ND	30000	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	30000	"	"	"	"	"	"	
Dibenzofuran	ND	30000	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	30000	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	150000	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	30000	"	"	"	"	"	"	
Diethyl phthalate	ND	30000	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	30000	"	"	"	"	"	"	
Dimethyl phthalate	ND	30000	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	99000	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	150000	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	30000	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	30000	"	"	"	"	"	"	
Fluoranthene	ND	30000	"	"	"	"	"	"	
Fluorene	ND	30000	"	"	"	"	"	"	
Hexachlorobenzene	ND	30000	"	"	"	"	"	"	

Great Lakes Analytical

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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Semivolatile Organic Compounds by EPA Method 8270C
Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-15 (B201120-07) Waste (L) Sampled: 01/09/02 16:05 Received: 01/10/02 10:00									
Hexachlorobutadiene	ND	30000	ug/kg	1	2010168	01/11/02	01/12/02	EPA 8270C	O2
Hexachlorocyclopentadiene	ND	30000	"	"	"	"	"	"	
Hexachloroethane	ND	30000	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	30000	"	"	"	"	"	"	
Isophorone	ND	30000	"	"	"	"	"	"	
2-Methylnaphthalene	ND	30000	"	"	"	"	"	"	
o-Cresol	ND	30000	"	"	"	"	"	"	
m,p-Cresols	ND	30000	"	"	"	"	"	"	
Phthalene	ND	30000	"	"	"	"	"	"	
2-Nitroaniline	ND	150000	"	"	"	"	"	"	
3-Nitroaniline	ND	150000	"	"	"	"	"	"	
4-Nitroaniline	ND	150000	"	"	"	"	"	"	
Nitrobenzene	ND	30000	"	"	"	"	"	"	
2-Nitrophenol	ND	30000	"	"	"	"	"	"	
4-Nitrophenol	ND	150000	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	30000	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	30000	"	"	"	"	"	"	
Pentachlorophenol	ND	150000	"	"	"	"	"	"	
Phenanthrene	ND	30000	"	"	"	"	"	"	
Phenol	ND	30000	"	"	"	"	"	"	
Pyrene	ND	30000	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	30000	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	150000	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	30000	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol	74.1 %	50-130			"	"	"	"	
Surrogate: Phenol-d6	77.9 %	50-130			"	"	"	"	
Surrogate: Nitrobenzene-d5	77.0 %	50-130			"	"	"	"	
Surrogate: 2-Fluorobiphenyl	89.5 %	50-130			"	"	"	"	
Surrogate: 2,4,6-Tribromophenol	96.2 %	50-130			"	"	"	"	
Surrogate: p-Terphenyl-d14	157 %	50-130			"	"	"	"	O5

Great Lakes Analytical

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Andy Johnson, Project Manager

Page 31 of 32



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Terra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Notes and Definitions

>220 >220 °F

O2 One or more internal standard recoveries were below the method specified acceptance criteria.

O4 The recovery for this analyte is below the laboratory's established acceptance criteria.

O5 The recovery for this analyte is above the laboratory's established acceptance criteria.

QC The result for one or more quality control measurements associated with this sample did not meet the laboratory and/or source method acceptance criteria.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Great Lakes Analytical

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200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01/18/02 10:23

Polychlorinated Biphenyls by EPA Method 8082

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-1 (B201120-01) Waste (L) Sampled: 01/08/02 17:00 Received: 01/10/02 10:00									
PCB-1016	ND	3.50	mg/kg	1	2010162	01-11-02	01-14-02	EPA 8082	
PCB-1221	ND	3.50	"	"	"	"	"	"	
PCB-1232	ND	3.50	"	"	"	"	"	"	
PCB-1242	ND	3.50	"	"	"	"	"	"	
PCB-1248	ND	3.50	"	"	"	"	"	"	
PCB-1254	ND	3.50	"	"	"	"	"	"	
PCB-1260	ND	3.50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		71.7 %	10-173		"	"	"	"	
Surrogate: Decachlorobiphenyl		17.1 %	10-192		"	"	"	"	
D-2 (B201120-02) Waste (L) Sampled: 01/08/02 17:15 Received: 01/10/02 10:00									
PCB-1016	ND	3.50	mg/kg	1	2010162	01-11-02	01-14-02	EPA 8082	
PCB-1221	ND	3.50	"	"	"	"	"	"	
PCB-1232	ND	3.50	"	"	"	"	"	"	
PCB-1242	ND	3.50	"	"	"	"	"	"	
PCB-1248	ND	3.50	"	"	"	"	"	"	
PCB-1254	ND	3.50	"	"	"	"	"	"	
PCB-1260	ND	3.50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		69.3 %	10-173		"	"	"	"	
Surrogate: Decachlorobiphenyl		13.8 %	10-192		"	"	"	"	
D-9B (B201120-03) Waste (L) Sampled: 01/09/02 14:45 Received: 01/10/02 10:00									
PCB-1016	ND	3.50	mg/kg	1	2010162	01-11-02	01-14-02	EPA 8082	
PCB-1221	ND	3.50	"	"	"	"	"	"	
PCB-1232	ND	3.50	"	"	"	"	"	"	
PCB-1242	ND	3.50	"	"	"	"	"	"	
PCB-1248	ND	3.50	"	"	"	"	"	"	
PCB-1254	ND	3.50	"	"	"	"	"	"	
PCB-1260	ND	3.50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		70.8 %	10-173		"	"	"	"	
Surrogate: Decachlorobiphenyl		14.6 %	10-192		"	"	"	"	

Great Lakes Analytical

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Chicago IL 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01-18-02 10:23

Polychlorinated Biphenyls by EPA Method 8082

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
T-4 (B201120-04) Waste (L) Sampled: 01/09/02 15:40 Received: 01/10/02 10:00									
PCB-1016	ND	3.50	mg/kg	1	2010162	01-11-02	01-14-02	EPA 8082	
PCB-1221	ND	3.50	"	"	"	"	"	"	
PCB-1232	ND	3.50	"	"	"	"	"	"	
PCB-1242	ND	3.50	"	"	"	"	"	"	
PCB-1248	ND	3.50	"	"	"	"	"	"	
PCB-1254	ND	3.50	"	"	"	"	"	"	
PCB-1260	ND	3.50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		71.5 %	10-173	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		40.0 %	10-192	"	"	"	"	"	
D-13 (B201120-05) Waste (L) Sampled: 01/09/02 15:45 Received: 01/10/02 10:00									
PCB-1016	ND	3.50	mg/kg	1	2010162	01-11-02	01-14-02	EPA 8082	
PCB-1221	ND	3.50	"	"	"	"	"	"	
PCB-1232	ND	3.50	"	"	"	"	"	"	
PCB-1242	ND	3.50	"	"	"	"	"	"	
PCB-1248	ND	3.50	"	"	"	"	"	"	
PCB-1254	ND	3.50	"	"	"	"	"	"	
PCB-1260	ND	3.50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		74.4 %	10-173	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		14.4 %	10-192	"	"	"	"	"	
D-12 (B201120-06) Waste (L) Sampled: 01/09/02 15:50 Received: 01/10/02 10:00									
PCB-1016	ND	3.50	mg/kg	1	2010162	01-11-02	01-14-02	EPA 8082	
PCB-1221	ND	3.50	"	"	"	"	"	"	
PCB-1232	ND	3.50	"	"	"	"	"	"	
PCB-1242	ND	3.50	"	"	"	"	"	"	
PCB-1248	ND	3.50	"	"	"	"	"	"	
PCB-1254	ND	3.50	"	"	"	"	"	"	
PCB-1260	ND	3.50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		45.2 %	10-173	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		33.3 %	10-192	"	"	"	"	"	

Great Lakes Analytical

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
01-18-02 10:23

Polychlorinated Biphenyls by EPA Method 8082

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
D-15 (B201120-07) Waste (L) Sampled: 01/09/02 16:05 Received: 01/10/02 10:00									
PCB-1016	ND	3.50	mg/kg	1	2010162	01-11-02	01-14-02	EPA 8082	
PCB-1221	ND	3.50	"	"	"	"	"	"	
PCB-1232	ND	3.50	"	"	"	"	"	"	
PCB-1242	ND	3.50	"	"	"	"	"	"	
PCB-1248	ND	3.50	"	"	"	"	"	"	
PCB-1254	ND	3.50	"	"	"	"	"	"	
PCB-1260	ND	3.50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		70.3 %	10-173	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		11.7 %	10-192	"	"	"	"	"	

Great Lakes Analytical

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andy Johnson, Project Manager



Tetra Tech EM Inc.

200 E. Randolph Drive, Suite 4700 ♦ Chicago, IL 60601 ♦ (312) 856-8700 ♦ FAX (312) 938-0118

MEMORANDUM

Date: 09 Apr 02

To: Brad White, Project Manager, Tetra Tech EM Inc. (Tetra Tech)
Superfund Technical Assessment and Response Team (START) for Region 5

From: Nancy McDonald, Chemist, Tetra Tech START for Region 5

Subject: Data Validation for
Gary Development Landfill Site
Gary, Indiana
Analytical Technical Direction Document (TDD) No. S05-0201-006
Project TDD No. S05-0201-005

Laboratory: Severn Trent Laboratories (STL), University Park, Illinois
Work Order No. 208299
Total Metals, Volatile Organic Compound (VOC), Semivolatile Organic Compound (SVOC),
Reactive Cyanide, Reactive Sulfide, and pH Analyses of Waste Sample D3-21 Comp;
Polychlorinated Biphenyl (PCB) and Flash Point Analyses of Waste Samples D3-21 Comp
and D28; and British Thermal Unit (BTU) and Total Organic Halide (TOX) Analysis of
Waste Sample D28

1.0 INTRODUCTION

The Tetra Tech START for Region 5 validated total metals, VOC, SVOC, reactive cyanide, reactive sulfide, pH, PCB, flash point, BTU, and TOC analytical data for two waste samples collected on 19 Feb 02 from the Gary Development Landfill site in Gary, Indiana. The samples were analyzed under the above-referenced work order by STL using U.S. Environmental Protection Agency (U.S. EPA) SW-846 Methods 6010B and 7470A for total metals analysis, 8260B for VOC analysis, 8270C for SVOC analysis, 7.3.3.2 and 9014 for reactive cyanide analysis, 7.3.4.2 and 9034 for reactive sulfide analysis, 8082 for PCB analysis, 1010 for flash point analysis, and 9076 for TOX analysis. STL also used U.S. EPA Chemical Analysis of Water and Wastes Method 150.1 for pH analysis and American Society for Testing and Materials (ASTM) Method D240 for BTU analysis.

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0201-006
Project TDD No. S05-0201-005
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The data were validated in general accordance with U.S. EPA's "Contract Laboratory Program National Functional Guidelines for Organic Data Review" dated Oct 99 and "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" dated Feb 94. Organic data validation consisted of a review of the following quality control (QC) parameters: holding times, instrument performance checks, initial and continuing calibrations, blank results, surrogate results, matrix spike and matrix spike duplicate (MS/MSD) results, laboratory control sample and laboratory control sample duplicate (LCS/LCSD) results, internal standard (IS) area counts, and target compound identification. Inorganic data validation consisted of a review of the following QC parameters: holding times, initial and continuing calibrations, blank results, LCS results, interference check sample (ICS) results, and MS/MSD results.

Section 2.0 discusses the results of the organic data validation, Section 3.0 discusses the results of the inorganic data validation, and Section 4.0 presents an overall assessment of the data. The attachment to this memorandum contains STL's summary of analytical results as well as START's handwritten data qualifications where warranted.

2.0 ORGANIC DATA VALIDATION RESULTS

The results of START's organic data validation are summarized below in terms of the QC parameters reviewed. The data qualifiers below were applied to the sample analytical results where warranted (see the attachment).

- J - The compound was detected. The reported numerical value is considered to be estimated for QC reasons.
- R - The sample result was rejected for QC reasons, and the presence or absence of the analyte cannot be verified.

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0201-006
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2.1 HOLDING TIMES

The samples were analyzed within the holding time limits of (1) 14 days to extraction and 40 days from extraction to analysis for SVOCs and PCBs and (2) 14 days to analysis for VOCs.

2.2 INSTRUMENT PERFORMANCE CHECKS

The decafluorotriphenylphosphine and bromofluorobenzene instrument performance checks met the QC abundance criteria for the SVOC and VOC analyses, respectively. The chromatographic resolution was adequate for the PCB analysis.

2.3 INITIAL AND CONTINUING CALIBRATIONS

For the VOC and SVOC analyses, the relative standard deviation (RSD) from the initial calibration result was less than or equal to the QC limit of 30 percent for the target compounds detected. However, relative response factors for acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone in the VOC initial and/or continuing calibration were less than the QC limit of 0.050. Therefore, nondetected results for 2-butanone, 4-methyl-2-pentanone, and 2-hexanone in Sample D3-21 Comp were flagged "R" as rejected. The detected result for acetone in Sample D3-21 Comp was flagged "J" as estimated. The continuing calibration results were less than or equal to the QC limit of 25 percent difference (%D) between the initial calibration relative response factor and the continuing calibration relative response factor for the target compounds detected with the following exception. The %D for benzoic acid exceeded the QC limit of 25 percent. Therefore, the detected benzoic acid result in sample D3-21 Comp was flagged "J" as estimated.

For the PCB analysis, the initial calibration result was within the QC limit of less than or equal to

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0201-006
Project TDD No. S05-0201-005
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20 percent RSD for the average of the five calibration factors (CF) for a single Aroclor. The continuing calibration standards were within the QC limit of less than or equal to 15 %D between the mean CF for the initial calibration curve and the CF for the continuing calibration.

2.4 BLANK RESULTS

A method blank was run with the analytical batch in the proper sequence. No target compounds were detected in the blank for the VOC, SVOC, or PCB analysis.

2.5 SURROGATE RESULTS

For the VOC analysis, all surrogate recoveries were within the laboratory-established QC limits. For the SVOC analysis, the recovery for base/neutral surrogate nitrobenzene-d5 in Sample D3-21 Comp was outside the laboratory-established QC limit. However, no qualifications were required because only one base/neutral surrogate result was outside QC limit. Surrogate recoveries were within the QC limits specified by the laboratory for the PCB analysis.

2.6 MS/MSD RESULTS

MSs and MSDs were not analyzed during the organic analyses. No qualifications were applied for this data gap.

2.7 LCS/LCSD RESULTS

For the VOC analysis, the LCS recovery for dichlorodifluoromethane was biased high and outside the QC limits specified by the laboratory. Because this compound was not detected in Sample D3-21 Comp, no qualifications were warranted.

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For the SVOC analysis, LCS/LCSD recoveries for benzidine were biased high and outside the QC limits specified by the laboratory. Because this compound was not detected in the Sample D3-21 Comp, no qualifications were warranted. The relative percent difference (RPD) for benzoic acid also exceeded the QC limit specified by the laboratory. Therefore, the benzoic acid result in sample D3-21 Comp was flagged "J" as estimated.

For the PCB analysis, LCS/LCSD recoveries were within the QC limits specified by the laboratory.

2.8 IS AREA COUNTS

For the VOC and SVOC analyses, the IS area counts were within the QC limits of -50 to +100 percent of those for the calibration standard. The retention times for the ISs were within the QC limit of ± 30 seconds. IS area counts do not apply to the PCB analysis.

2.9 TARGET COMPOUND IDENTIFICATION

A spot-check of the chromatograms for the VOC, SVOC, and PCB analyses confirmed the target compound identifications for the sample.

3.0 INORGANIC DATA VALIDATION RESULTS

The results of START's inorganic data validation are summarized below in terms of the QC parameters reviewed. The data qualifier below was applied to the sample analytical results where warranted (see the attachment).

- J - The analyte was detected. The reported numerical value is considered to be estimated for QC reasons.

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0201-006
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3.1 HOLDING TIMES

The samples were analyzed within the holding time limits of (1) 28 days for mercury and (2) 6 months for other metals. The pH analytical method (EPA Method 150.1) states that samples should be analyzed "as soon as possible." The sample was analyzed for pH on the day of receipt by the laboratory, meeting the holding time requirement.

3.2 INITIAL AND CONTINUING CALIBRATIONS

During the initial and continuing calibrations, recoveries were within the QC limits of 80 to 120 percent for mercury and 90 to 110 percent for other metals, BTU, reactive cyanide, reactive sulfide, and TOX.

For the pH analysis, the pH meter was checked using a standard buffer solution with a pH of 7.00 before and after the analysis. The pH meter generated readings of 6.90 and 6.93; therefore, the instrument appears to have been working properly. Aside from the holding time requirement (see Section 3.1), this check is the only QC parameter that applies to pH analysis.

3.3 BLANK RESULTS

Appropriate blanks, such as initial calibration blanks, continuing calibration blanks, and method blanks, were run with each analytical batch. No target analytes were detected in the blanks at concentrations above the instrument detection limits with the following exception. Calcium was detected in the method blank at a concentration above the reporting limit. No qualifications were warranted because the sample result was greater than five times the blank concentration.

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0201-006
Project TDD No. S05-0201-005
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3.4 LCS RESULTS

An LCS was analyzed with each analytical batch. The recoveries were within the laboratory-established QC limits for each target analyte. For the TOX analysis, the RPD exceeded the laboratory-established QC limit of 20 percent. Therefore, the TOX result for Sample D28 was flagged "J" as estimated.

For the flash point analysis, the laboratory instrument was checked using a p-xylene standard, and it generated measurements of 81.7 and 80.7°F for flash point. The flash point of p-xylene is approximately 81 °F; therefore, the instrument appears to have been working properly. This check is the only QC parameter that applies to flash point analysis.

3.5 ICS RESULTS

The ICS results were within the QC limit of 80 to 120 percent recovery.

3.6 MS/MSD RESULTS

MSs and MSDs were analyzed with the samples. All percent recoveries were within the QC limits established by the laboratory with the following exception. The percent recovery for sodium for the MSD was biased low and outside the QC limit; therefore, the sodium result for Sample D3-21 Comp was flagged "J" as estimated.

4.0 OVERALL ASSESSMENT OF DATA

Overall, the sample analytical data generated by STL are acceptable for use as qualified.

ATTACHMENT
STL SUMMARY OF ANALYTICAL RESULTS
(Eight Sheets)

Job Number: 208299

LABORATORY TEST RESULTS

Date: 03/01/2002

CUSTOMER: Tetra Tech EM Inc.

PROJECT: START - CRAVY DEVELO

ATTN: Anne Troup

Customer Sample ID: D3-21 Crmp
 Date Sampled: 02/19/2002
 Time Sampled: 10:15
 Sample Matrix: Water

Laboratory Sample ID: 208299-1
 Date Received: 02/21/2002
 Time Received: 08:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MOL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8082	PCB Analysis											
	Aroclor 1016	0.40	U		0.24	0.40	1.00000	ug/L	45999		02/27/02 1944	mgk
	Aroclor 1221	0.40	U		0.31	0.40	1.00000	ug/L	45999		02/27/02 1944	mgk
	Aroclor 1232	0.40	U		0.19	0.40	1.00000	ug/L	45999		02/27/02 1944	mgk
	Aroclor 1242	0.40	U		0.31	0.40	1.00000	ug/L	45999		02/27/02 1944	mgk
	Aroclor 1248	0.40	U		0.32	0.40	1.00000	ug/L	45999		02/27/02 1944	mgk
	Aroclor 1254	0.40	U		0.24	0.40	1.00000	ug/L	45999		02/27/02 1944	mgk
	Aroclor 1260	0.40	U		0.098	0.40	1.00000	ug/L	45999		02/27/02 1944	mgk
7.3.3.2/9014	Reactivity, Cyanide											
	Reactivity, Cyanide	0.01	U		0.01	0.01	1	mg/L	45890		02/26/02 1642	mpw
7.3.4.2/9034	Reactivity, Sulfide											
	Reactivity, Sulfide	1.7	U		1.7	1.7	1	mg/L	45870		02/25/02 1640	nyp
150.1	pH (Water)											
	pH	6.53			0.20	0.20	1	pH Units	45626		02/21/02 1704	cww
1010	Ignitability (Pensky-Martens Closed-Cup)											
	Ignitability (Flashpoint)	80					1	degrees F	45878		02/26/02 1223	mk
7470A	Mercury (CVAA)											
	Mercury	0.00020	U		0.000065	0.00020	1	mg/L	45959		02/26/02 1435	gsk
6010B	Metals Analysis (ICAP Trace)											
	Aluminum	0.0971	B		0.0185	0.200	1	mg/L	45955		02/25/02 2222	lms
	Antimony	0.0200	U		0.0111	0.0200	1	mg/L	45955		02/25/02 2222	lms
	Arsenic	0.0100	U		0.0053	0.0100	1	mg/L	45955		02/25/02 2222	lms
	Barium	0.0299			0.0028	0.0100	1	mg/L	45955		02/25/02 2222	lms

* In Description - Dry Wgt..

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Job Number: 208299

LABORATORY TEST RESULTS

Date: 03/01/2002

CUSTOMER: Tetra Tech EM Inc.

PROJECT: START - CRAVY DEVELO

ATTN: Anne Troup

Customer Sample ID: D3-21 Comp
 Date Sampled: 02/19/2002
 Time Sampled: 10:15
 Sample Matrix: Water

Laboratory Sample ID: 208299-1
 Date Received: 02/21/2002
 Time Received: 08:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RT	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8270C	Beryllium	0.0040	U		0.00029	0.0040	1	mg/L	45955		02/25/02 2222	lmc
	Cadmium	0.0020	U		0.00032	0.0020	1	mg/L	45955		02/25/02 2222	lmc
	Calcium	32.1		✓	0.0222	0.100	1	mg/L	45899		02/26/02 1523	lmc
	Chromium	0.440			0.0030	0.0100	1	mg/L	45955		02/25/02 2222	lmc
	Cobalt	0.0063			0.0020	0.0050	1	mg/L	45955		02/25/02 2222	lmc
	Copper	0.0222			0.0028	0.0100	1	mg/L	45955		02/25/02 2222	lmc
	Iron	2.22			0.0437	0.0500	1	mg/L	45955		02/25/02 2222	lmc
	Lead	0.0065			0.0047	0.0050	1	mg/L	45899		02/25/02 2222	lmc
	Magnesium	6.48			0.0096	0.100	1	mg/L	45955		02/25/02 2222	lmc
	Manganese	0.276			0.0016	0.0100	1	mg/L	45955		02/25/02 2222	lmc
	Nickel	0.277			0.0026	0.0100	1	mg/L	45955		02/25/02 2222	lmc
	Antimony	3.54			0.0292	0.500	1	mg/L	45955		02/25/02 2222	lmc
	Selenium	0.0100	U		0.0049	0.0100	1	mg/L	45955		02/25/02 2222	lmc
	Silver	0.0021	B		0.0013	0.0050	1	mg/L	45955		02/25/02 2222	lmc
	Sodium	18.5		J	0.469	1.00	1	mg/L	45955		02/25/02 2222	lmc
	Thallium	0.0100	U		0.0074	0.0100	1	mg/L	45899		02/25/02 2222	lmc
	Vanadium	0.0050	U		0.0023	0.0050	1	mg/L	45955		02/25/02 2222	lmc
	Zinc	0.582			0.0027	0.0200	1	mg/L	45955		02/25/02 2222	lmc
	Semivolatile Organics											
	Phenol	130	U		50	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Bis(2-chloroethyl)ether	130	U		63	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	1,3-Dichlorobenzene	130	U		75	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	1,4-Dichlorobenzene	130	U		76	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	1,2-Dichlorobenzene	130	U		71	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Benzyl alcohol	8300	U		620	1300	100.0000	ug/L	46012		02/26/02 2010	dpk
	2-Methylphenol (o-cresol)	130	U		66	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2,2'-oxybis (1-chloropropane)	130	U		55	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	n-Nitroso-di-n-propylamine	130	U		51	130	10.00000	ug/L	46012		02/26/02 1836	dpk

* In Description - Dry Wgt.

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L.M 3 18.08

LABORATORY TEST RESULTS

Job Number: 208299

Date: 03/01/2002

CUSTOMER: Tetra Tech EM Inc.

PROJECT: START - CHAVY DEVELO

ATTN: Anne Troup

Customer Sample ID: D3 Z1 Comp
Date Sampled: 02/19/2002
Time Sampled: 10:15
Sample Matrix: Water

Laboratory Sample ID: 208299-1
Date Received: 02/21/2002
Time Received: 08:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Hexachloroethane	130	U	110	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	4-Methylphenol (m/p cresol)	130	U	50	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2-Chlorophenol	130	U	58	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Nitrobenzene	130	U	51	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Bis(2-chloroethoxy)methane	130	U	63	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	1,2,4-Trichlorobenzene	130	U	75	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Benzoic acid	1600	U	86	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	Isophorone	130	U	43	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2,4-Dimethylphenol	130	U	61	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Hexachlorobutadiene	130	U	110	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Naphthalene	130	U	57	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2,4-Dichlorophenol	130	U	57	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	4-Chloroaniline	130	U	36	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2,4,6-Trichlorophenol	130	U	37	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2,4,5-Trichlorophenol	660	U	47	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	Hexachlorocyclopentadiene	130	U	21	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2-Methylnaphthalene	130	U	57	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2-Nitroaniline	660	U	53	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	2-Chloronaphthalene	130	U	47	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	4-Chloro-3-methylphenol	130	U	50	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2,6-Dinitrotoluene	130	U	39	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2-Nitrophenol	130	U	57	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	3-Nitroaniline	660	U	46	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	Dimethyl phthalate	130	U	41	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2,4-Dinitrophenol	660	U	160	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	Acenaphthylene	130	U	42	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	2,4-Dinitrotoluene	130	U	41	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Acenaphthene	130	U	41	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Dibenzofuran	130	U	45	130	10.00000	ug/L	46012		02/26/02 1836	dpk

* In Description - Dry Wgt

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02/26/02 1836

Job Number: 208299

LABORATORY TEST RESULTS

Date: 03/01/2002

CUSTOMER: Tetra Tech EM Inc.

PROJECT: START - CRAVY DEVELO

ATTN: Anne Troup

Customer Sample ID: D1-21 Comp
 Date Sampled: 02/19/2002
 Time Sampled: 10:15
 Sample Matrix: Water

Laboratory Sample ID: 208299-1
 Date Received: 02/21/2002
 Time Received: 08:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q FLAGS	MEL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	4-Nitrophenol	660	U	93	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	Fluorene	130	U	53	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	4-Nitroaniline	660	U	80	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	4-Bromophenyl phenyl ether	130	U	38	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Hexachlorobenzene	130	U	37	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Diethyl phthalate	12000	U	540	1300	100.0000	ug/L	46012	D1	02/26/02 2010	dpk
	4-Chlorophenyl phenyl ether	130	U	47	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Pentachlorophenol	660	U	61	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	n-Nitrosodiphenylamine	130	U	50	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	4,6-Dinitro-2-methylphenol	660	U	84	660	10.00000	ug/L	46012		02/26/02 1836	dpk
	Phenanthrene	130	U	33	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Anthracene	130	U	33	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Carbazole	130	U	37	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Di-n-butyl phthalate	130	U	46	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Benzidine	1300	U	840	1300	10.00000	ug/L	46012		02/26/02 1836	dpk
	Fluoranthene	130	U	59	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Pyrene	130	U	51	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Bis(2-ethylhexyl)phthalate	130	U	66	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Benzo(a)anthracene	130	U	33	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Chrysene	130	U	39	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	3,3-Dichlorobenzidine	260	U	58	260	10.00000	ug/L	46012		02/26/02 1836	dpk
	Bis(2-ethylhexyl)phthalate	130	U	79	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Di-n-octyl phthalate	130	U	57	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Benzo(k)fluoranthene	130	U	47	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Benzo(k)fluoranthene	130	U	49	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Benzo(a)pyrene	130	U	49	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Indeno(1,2,3-cd)pyrene	130	U	66	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Dibenzo(a,h)anthracene	130	U	47	130	10.00000	ug/L	46012		02/26/02 1836	dpk
	Benzo(ghi)perylene	130	U	57	130	10.00000	ug/L	46012		02/26/02 1836	dpk

* In Description = Dry Wgt.

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0.17318.02

Job Number: 208299

LABORATORY TEST RESULTS

Date: 03/01/2002

CUSTOMER: Tetra Tech EM Inc.

PROJECT: START - CRAVY DEVELO

ATTN: Anne Troup

Customer Sample ID: D3 21 Comp
 Date Sampled: 02/19/2002
 Time Sampled: 10:15
 Sample Matrix: Water

Laboratory Sample ID: 208299-1
 Date Received: 02/21/2002
 Time Received: 08:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q-FLAGS	MUL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
8260B	Volatile Organics										
	Dichlorodifluoromethane	10	U	1.4	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Chloromethane	10	U	1.6	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Vinyl chloride	10	U	1.8	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Bromomethane	10	U	1.8	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Chloroethane	10	U	2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Trichlorofluoromethane	10	U	2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,1-Dichloroethane	10	U	1.9	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Carbon disulfide	20	U	4.0	20	10.0000	ug/L	45930		02/26/02 1131	jah
	Acetone	1300	U	75	100	50.0000	ug/L	45930	D1	02/26/02 1935	jah
	Methylene chloride	10	U	1.9	10	10.0000	ug/L	45930		02/26/02 1131	jah
	trans-1,2-Dichloroethane	10	U	2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Methyl tert-butyl-ether (MTBE)	10	U	2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,1-Dichloroethane	10	U	2.0	10	10.0000	ug/L	45930		02/26/02 1131	jah
	2,2-Dichloropropane	10	U	2.0	10	10.0000	ug/L	45930		02/26/02 1131	jah
	cis-1,2-Dichloroethane	10	U	2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	2-Butanone (MEK)	20	U	17	20	10.0000	ug/L	45930		02/26/02 1131	jah
	Bromochloromethane	10	U	1.9	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Chloroform	10	U	2.3	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,1,1-Trichloroethane	10	U	2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,1-Dichloropropane	10	U	2.4	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Carbon tetrachloride	10	U	2.4	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Benzene	10	U	2.0	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,2-Dichloroethane	10	U	2.5	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Trichloroethane	10	U	2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,2-Dichloropropane	10	U	2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Dibromomethane	10	U	2.6	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Bromodichloromethane	10	U	2.3	10	10.0000	ug/L	45930		02/26/02 1131	jah
	cis-1,3-Dichloropropene	10	U	2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah

* In Description = Dry Wgt.

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NM 3-18-02

Job Number: 208299

LABORATORY TEST RESULTS

Date: 01/01/2007

CUSTOMER: Tetra Tech EM Inc.

PROJECT: START - CRAVY DEVELO

ATTN: Anne Troup

Customer Sample ID: D3-21 Comp
 Date Sampled: 02/19/2002
 Time Sampled: 10:15
 Sample Matrix: Water

Laboratory Sample ID: 208299-1
 Date Received: 02/21/2002
 Time Received: 08:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	4-Methyl-2-pentanone (MIBK)	20		R	9.2	20	10.0000	ug/L	45930		02/26/02 1131	jah
	Toluene	11			2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	trans-1,3-Dichloropropene	10	U		2.4	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,1,2-Trichloroethane	10	U		3.3	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Tetrachloroethane	10	U		2.0	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,3-Dichloropropane	10	U		2.3	10	10.0000	ug/L	45930		02/26/02 1131	jah
	2 Hexanone	20		R	12	20	10.0000	ug/L	45930		02/26/02 1131	jah
	Dibromochloromethane	10	U		2.3	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,2 Dibromomethane (EDB)	10	U		2.5	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Chlorobenzene	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,1,1,2 Tetrachloroethane	10	U		2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Ethylbenzene	10	U		2.0	10	10.0000	ug/L	45930		02/26/02 1131	jah
	m,p-Xylenes	20	U		3.9	20	10.0000	ug/L	45930		02/26/02 1131	jah
	o-Xylene	10	U		2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Styrene	10	U		2.3	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Bromoform	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Isopropylbenzene	10	U		2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	Bromobenzene	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,1,2,2-Tetrachloroethane	10	U		2.5	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,2,3-Trichloropropane	10	U		2.0	10	10.0000	ug/L	45930		02/26/02 1131	jah
	n-Propylbenzene	10	U		2.5	10	10.0000	ug/L	45930		02/26/02 1131	jah
	2 Chlorotoluene	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,3,5-Trimethylbenzene	10	U		2.0	10	10.0000	ug/L	45930		02/26/02 1131	jah
	4-Chlorotoluene	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	tert-Butylbenzene	10	U		2.1	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,2,4-Trimethylbenzene	10	U		2.0	10	10.0000	ug/L	45930		02/26/02 1131	jah
	sec Butylbenzene	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah
	1,3-Dichlorobenzene	10	U		2.3	10	10.0000	ug/L	45930		02/26/02 1131	jah
	p-Isopropyltoluene	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 1131	jah

* In Description : Dry Wgt.

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02/26/02 1131

Job Number: 208299

LABORATORY TEST RESULTS

Date: 03/01/2002

CUSTOMER: Tetra Tech EM Inc.

PROJECT: START - CRAVY DEVELO

ATTN: Anne Troup

Customer Sample ID: D1-21 Comp
 Date Sampled: 02/19/2002
 Time Sampled: 10:15
 Sample Matrix: Water

Laboratory Sample ID: 208299-1
 Date Received: 02/21/2002
 Time Received: 08:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	1,4-Dichlorobenzene	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 11:31	jab
	n-Butylbenzene	10	U		2.2	10	10.0000	ug/L	45930		02/26/02 11:31	jab
	1,2-Dichlorobenzene	10	U		2.4	10	10.0000	ug/L	45930		02/26/02 11:31	jab
	1,2-Dibromo-3-chloropropane	10	U		4.6	10	10.0000	ug/L	45930		02/26/02 11:31	jab
	1,2,4-Trichlorobenzene	10	U		2.3	10	10.0000	ug/L	45930		02/26/02 11:31	jab
	Hexachlorobutadiene	10	U		2.4	10	10.0000	ug/L	45930		02/26/02 11:31	jab
	Naphthalene	10	U		3.4	10	10.0000	ug/L	45930		02/26/02 11:31	jab
	1,2,3-Trichlorobenzene	10	U		2.4	10	10.0000	ug/L	45930		02/26/02 11:31	jab

* In Description - Dry Wgt.

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LABORATORY TEST RESULTS						Date: 03/01/2002							
Job Number: 208299													
CUSTOMER: Tetra Tech EM Inc.						PROJECT: START - CRAVY DEVELO						ATTN: Anne Troup	
Customer Sample ID: D28						Laboratory Sample ID: 208299-2							
Date Sampled..... : 02/19/2002						Date Received..... : 02/21/2002							
Time Sampled..... : 10:15						Time Received..... : 08:00							
Sample Matrix..... : Water													
TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH	
8082	PCB Analysis												
	Aroclor 1016, Oil	1100	U		1100	1100	5.00000	ug/Kg	46000		02/27/02 2227	mgk	
	Aroclor 1221, Oil	1100	U		1100	1100	5.00000	ug/Kg	46000		02/27/02 2227	mgk	
	Aroclor 1232, Oil	1100	U		1100	1100	5.00000	ug/Kg	46000		02/27/02 2227	mgk	
	Aroclor 1242, Oil	1100	U		1100	1100	5.00000	ug/Kg	46000		02/27/02 2227	mgk	
	Aroclor 1248, Oil	1100	U		1100	1100	5.00000	ug/Kg	46000		02/27/02 2227	mgk	
	Aroclor 1254, Oil	1100	U		1100	1100	5.00000	ug/Kg	46000		02/27/02 2227	mgk	
	Aroclor 1260, Oil	1100	U		1100	1100	5.00000	ug/Kg	46000		02/27/02 2227	mgk	
9076	Halide, Total Organic as Cl (TOX) TOX Average Duplicates, Oil	420		J	5.0	5.0	1	mg/Kg	46039		02/26/02 1720	cls	
D240	BTU analysis BTU/lb, Oil	19250				350	1	BTU/lb	46079		02/28/02 1500	dlh	
1010	Ignitability (Pensky-Martens Closed-Cup) Ignitability (Flashpoint), Oil	120					1	degrees F	45944		02/27/02 1103	imk	

* In Description = Dry Wt.

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208299-2



Tetra Tech EM Inc.

200 E. Randolph Drive, Suite 4700 ♦ Chicago, IL 60601 ♦ (312) 856-8700 ♦ FAX (312) 938-0118

MEMORANDUM

Date: 14 Jun 02

To: Brad White, Project Manager, Tetra Tech EM Inc. (Tetra Tech)
Superfund Technical Assessment and Response Team (START) for Region 5

From: Harry Ellis, Chemist, Tetra Tech START for Region 5

Subject: Data Validation for
Gary Development Landfill Site
Gary, Indiana
Analytical Technical Direction Document (TDD) No. S05-0205-001
Project TDD No. S05-0201-005

Laboratory: Great Lakes Analytical (GLA), Buffalo Grove, Illinois
Work Order No. B205134
Total Metals, Volatile Organic Compound (VOC), Semivolatile Organic Compound (SVOC),
and Polychlorinated Biphenyl (PCB) Analyses of Five Surface Water Samples and One Trip
Blank

1.0 INTRODUCTION

The Tetra Tech START for Region 5 validated total metals, VOC, SVOC, and PCB analytical data for five surface water samples and one trip blank collected on 09 May 02 from the Gary Development Landfill site in Gary, Indiana. The trip blank was analyzed for VOCs only. The samples were analyzed under the above-referenced work order by GLA using U.S. Environmental Protection Agency (U.S. EPA) SW-846 Methods 6010B, 7421, and 7470A for total metals analysis; 8260B for VOC analysis; 8270C for SVOC analysis; and 8082 for PCB analysis.

The data were validated in general accordance with U.S. EPA's "Contract Laboratory Program National Functional Guidelines for Organic Data Review" dated Oct 99 and "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" dated Feb 94. Organic data validation

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0205-001
Project TDD No. S05-0201-005
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consisted of a review of the following quality control (QC) parameters: holding times, instrument performance checks, initial and continuing calibrations, blank results, surrogate recovery results, matrix spike and matrix spike duplicate (MS/MSD) results, laboratory control sample and laboratory control sample duplicate (LCS/LCSD) results, internal standard (IS) area counts, and target compound identification. Inorganic data validation consisted of a review of the following QC parameters: holding times, initial and continuing calibrations, blank results, LCS results, interference check sample (ICS) results, and MS/MSD results.

Section 2.0 discusses the results of the organic data validation, Section 3.0 discusses the results of the inorganic data validation, and Section 4.0 presents an overall assessment of the data. The attachment to this memorandum contains GLA's summary of analytical results as well as START's handwritten data qualifications where warranted.

2.0 ORGANIC DATA VALIDATION RESULTS

The results of START's organic data validation are summarized below in terms of the QC parameters reviewed. The data qualifier below was applied to the sample analytical results where warranted (see the attachment).

- UJ - The compound was not detected in the sample. The reported quantitation limit is considered estimated for QC reasons.

2.1 HOLDING TIMES

The samples were analyzed within the holding time limits of (1) 14 days to extraction and 40 days from extraction to analysis for SVOCs and PCBs and (2) 14 days to analysis for VOCs.

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Gary Development Landfill Site
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2.2 INSTRUMENT PERFORMANCE CHECKS

The decafluorotriphenylphosphine and bromofluorobenzene instrument performance checks met the QC abundance criteria for the SVOC and VOC analyses, respectively. The chromatographic resolution was adequate for the PCB analysis.

2.3 INITIAL AND CONTINUING CALIBRATIONS

For the VOC and SVOC analyses, either the relative standard deviation (RSD) for the initial calibration result was less than or equal to the QC limit of 30 percent or the correlation coefficient exceeded the QC limit of 0.99 for detected target compounds. All average response factors were acceptable. The continuing calibration results were less than or equal to the QC limit of 25 percent difference (%D) between the initial calibration relative response factor with the following exceptions. In the VOC analyses, the %D exceeded the QC limit of 25 percent for the following analytes: acetone, bromomethane, 2-butanone, carbon disulfide, carbon tetrachloride, chloroethane, chloromethane, 2-hexanone, methylene chloride, 4-methyl-2-pentanone, and vinyl acetate. In the SVOC analyses, the %D exceeded the QC limit of 25 percent for the following analytes: aniline; 4,6-dinitro-2-methylphenol; 2,4-dinitrophenol; and 4-nitrophenol. Therefore, the nondetected results for those compounds were flagged "UJ" to indicate that the quantitation limit is estimated.

For the PCB analysis, the initial calibration result was within the QC limit of less than or equal to 20 percent RSD for the average of the five calibration factors (CF) for a single Aroclor. The continuing calibration standards were within the QC limit of less than or equal to 15 %D between the mean CF for the initial calibration curve and the CF for the continuing calibration.

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0205-001
Project TDD No. S05-0201-005
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2.4 BLANK RESULTS

A method blank was run with the analytical batch in the proper sequence. No target compounds were detected in the blank for the VOC, SVOC, or PCB analysis. Additionally, no VOC compounds were detected in the trip blank.

2.5 SURROGATE RECOVERY RESULTS

For the VOC analysis, all surrogate recoveries were within the laboratory-established QC limits. For the SVOC analysis, there were irregular recoveries for some surrogates in all samples. In sample GD-SW-0203-01, all surrogate recoveries were negligible or zero. This may be due to a laboratory error (not spiking the sample) or to severe matrix interference, but all SVOC results for that sample are flagged "UJ" to indicate that the reporting limits are estimated. In the other samples, the recoveries for two of the three acidic surrogates were below the laboratory-specified QC limits. All recoveries for acidic analytes in these samples are similarly flagged "UJ." Surrogate recoveries were within the QC limits specified by the laboratory for the PCB analysis.

2.6 MS/MSD RESULTS

MSs and MSDs were analyzed during the organic analyses using sample GD-SW-0809-04. In the VOC analysis, recoveries of vinyl acetate were 260 and 238 percent, respectively, versus QC limits of 10 to 239 percent. These high recoveries seem to be the result of the irregular continuing calibration result for that analyte; therefore, no further qualifications are warranted. In the SVOC MS sample, all recoveries were below their laboratory-specified QC limits. In the SVOC MSD sample, most recoveries were below QC limits and most relative percent difference (RPD) results exceeded their QC limits. Due to this severe matrix interference in this MS/MSD sample, all results for the parent sample (GD-SW-0809-04) are qualified "UJ" to indicate that the quantitation limits are estimated and biased low.

Data Validation for
Gary Development Landfill Site
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Project TDD No. S05-0201-005
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No MS/MSD analysis was performed for the PCB analysis. No qualifications were applied for this data gap.

2.7 LCS/LCSD RESULTS

For the VOC and PCB analyses, all LCS/LCSD recoveries were within the QC limits specified by the laboratory. For the SVOC analysis, most LCS/LCSD recoveries were within the QC limits specified by the laboratory. However, m+p-cresol, 4-nitrophenol, and phenol had slightly low recoveries in both the LCS and the LCSD samples (for example, 23.8 and 22.4 percent versus QC limits of 24.3 to 110 percent for m+p-cresol), and o-cresol had a slightly low recovery in the LCSD sample only. No qualifications are warranted for these minor deviations.

2.8 IS AREA COUNTS

For the VOC analyses, the IS area counts were within the QC limits of -50 to +100 percent of those for the calibration standard. Most SVOC IS area counts were within the QC limits, but perylene-d12, the last of six ISs, had slightly low area counts in samples GD-SW-0203-01D, GD-SW-1213-03, and GD-SW-0809-04. Similar low area counts were seen in the LCSD and MSD samples. All results for the analytes quantitated against perylene-d12 are therefore flagged "UJ" as estimates. The retention times for the ISs were within the QC limit of ± 30 seconds for all VOC and SVOC analyses. ISs are not used in the PCB analysis.

2.9 TARGET COMPOUND IDENTIFICATION

The field sample did not contain measurable amounts of VOCs, SVOCs, or PCBs. The SVOC chromatograms show a large number of small peaks merging into a hump in the area associated with polynuclear aromatic hydrocarbons. However, none of the analytes could be distinguished from this mass.

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Gary Development Landfill Site
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Project TDD No. S05-0201-005
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3.0 INORGANIC DATA VALIDATION RESULTS

The results of START's inorganic data validation are summarized below in terms of the QC parameters reviewed. The data qualifier below was applied to the sample analytical results where warranted (see the attachment).

- U - The analyte was not detected. The reported numerical value is the sample quantitation limit.

3.1 HOLDING TIMES

The samples were analyzed within the holding time limits of (1) 28 days for mercury and (2) 6 months for other metals.

3.2 INITIAL AND CONTINUING CALIBRATIONS

During the initial and continuing calibrations, recoveries were within the QC limits of 80 to 120 percent for mercury and 90 to 110 percent for other metals.

3.3 BLANK RESULTS

Appropriate blanks, such as initial calibration blanks, continuing calibration blanks, and method blanks, were run with each analytical batch. No target analytes were detected in the blanks at concentrations above the reporting limits, but trace concentrations of several metals were detected in several blanks. In most cases, no qualifications are warranted because the sample results were greater than five times the blank concentration. However, four of the chromium results failed that criterion; therefore, these results in the investigative samples were flagged "U" to indicate that they may be laboratory artifacts.

Data Validation for
Gary Development Landfill Site
Analytical TDD No. S05-0205-001
Project TDD No. S05-0201-005
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3.4 LCS RESULTS

An LCS was analyzed with each analytical batch. The recoveries were within the laboratory-established QC limits for each target analyte.

3.5 ICS RESULTS

The ICS results were within the QC limit of 80 to 120 percent recovery.

3.6 MS/MSD RESULTS

MSs and MSDs were analyzed with the samples. All percent recoveries were within the QC limits established by the laboratory with the following exception. The percent recovery for sodium for the MSD was biased low and outside the QC limit. However, the sample used for these MS/MSD analyses was from another site; therefore, no qualifications are warranted for the sample data being validated.

4.0 OVERALL ASSESSMENT OF DATA

Overall, the sample analytical data generated by GLA are acceptable for use as qualified. The primary problem was the matrix interference in the SVOC analyses. Part of this interference may be due to the nontarget SVOCs present on the sample chromatograms, but nonvolatile compounds are probably the primary or sole source of the interference.

ATTACHMENT

GLA SUMMARY OF ANALYTICAL RESULTS

(23 Sheets)



1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Total Metals by EPA 6000/7000 Series Methods

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0203-01 (B205134-01) Water Sampled: 05/09/02 14:40 Received: 05/10/02 09:39									
Mercury	0.000368	0.000200	mg/l	1	2050271	05/15/02	05/15/02	EPA 7470A	
Aluminum	ND	0.500	"	"	2050233	05/13/02	05/16/02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	39.3	5.50	"	11	"	"	"	"	
Chromium	0.0112	0.0100	"	1	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	0.0998	0.0500	"	"	"	"	"	"	
Iron	0.260	0.100	"	"	"	"	"	"	
Magnesium	108	5.50	"	11	"	"	"	"	
Manganese	0.0752	0.0500	"	1	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	135	5.50	"	11	"	"	"	"	
Selenium	ND	0.0500	"	1	"	"	"	"	
Silver	ND	0.0500	"	"	"	"	"	"	
Sodium	794	25.5	"	51	"	"	"	"	QC
Thallium	ND	0.100	"	1	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	ND	0.500	"	"	"	"	"	"	
Lead	0.00938	0.00500	"	"	"	"	05/15/02	EPA 7421	

GD-SW-0203-01D (B205134-02) Water Sampled: 05/09/02 13:40 Received: 05/10/02 09:39

Mercury	ND	0.000200	mg/l	1	2050271	05/15/02	05/15/02	EPA 7470A	
Aluminum	ND	0.500	"	"	2050233	05/13/02	05/16/02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	39.2	5.50	"	11	"	"	"	"	
Chromium	0.0121	0.0100	"	1	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	0.0717	0.0500	"	"	"	"	"	"	
Iron	0.253	0.100	"	"	"	"	"	"	
Magnesium	107	5.50	"	11	"	"	"	"	
Manganese	0.0741	0.0500	"	1	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	132	5.50	"	11	"	"	"	"	
Selenium	ND	0.0500	"	1	"	"	"	"	

Great Lakes Analytical

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Andy Johnson 11 Jun 02

Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Total Metals by EPA 6000/7000 Series Methods Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0203-01D (B205134-02) Water Sampled: 05/09/02 13:40 Received: 05/10/02 09:39									
Silver	ND	0.0500	mg/l	1	2050233	05-13-02	05-16-02	EPA 6010B	
Sodium	787	25.5	"	51	"	"	"	"	QC
Thallium	ND	0.100	"	1	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	ND	0.500	"	"	"	"	"	"	
Lead	0.00647	0.00500	"	"	"	"	05-15-02	EPA 7421	
GD-SW-0405-02 (B205134-03) Water Sampled: 05/09/02 15:05 Received: 05/10/02 09:39									
Mercury	ND	0.000200	mg/l	1	2050271	05/15/02	05/15/02	EPA 7470A	
Aluminum	ND	0.500	"	"	2050233	05-13-02	05-16-02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	39.2	5.50	"	11	"	"	"	"	
Chromium	0.0129	0.0100	"	1	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	ND	0.0500	"	"	"	"	"	"	
Iron	0.258	0.100	"	"	"	"	"	"	
Magnesium	107	5.50	"	11	"	"	"	"	
Manganese	0.0713	0.0500	"	1	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	134	5.50	"	11	"	"	"	"	
Selenium	ND	0.0500	"	1	"	"	"	"	
Silver	ND	0.0500	"	"	"	"	"	"	
Sodium	784	25.5	"	51	"	"	"	"	QC
Thallium	ND	0.100	"	1	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	ND	0.500	"	"	"	"	"	"	
Lead	ND	0.00500	"	"	"	"	05/15/02	EPA 7421	

Great Lakes Analytical

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Andy Johnson

Andy Johnson, Project Manager



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Tetra Tech EM1 - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Total Metals by EPA 6000/7000 Series Methods

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-1213-03 (B205134-04) Water Sampled: 05/09/02 15:30 Received: 05/10/02 09:39									
Mercury	ND	0.000200	mg/l	1	2050271	05/15/02	05/15/02	EPA 7470A	
Aluminum	ND	0.500	"	"	2050233	05/13/02	05/16/02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	38.5	5.50	"	11	"	"	"	"	
Chromium	0.0119	0.0100	"	1	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	ND	0.0500	"	"	"	"	"	"	
Iron	0.339	0.100	"	"	"	"	"	"	
Magnesium	107	5.50	"	11	"	"	"	"	
Manganese	0.130	0.0500	"	1	"	"	"	"	
Nickel	0.0581	0.0500	"	"	"	"	"	"	
Potassium	135	5.50	"	11	"	"	"	"	
Selenium	ND	0.0500	"	1	"	"	"	"	
Silver	ND	0.0500	"	"	"	"	"	"	
Sodium	793	25.5	"	51	"	"	"	"	QC
Thallium	ND	0.100	"	1	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	ND	0.500	"	"	"	"	"	"	
Lead	ND	0.00500	"	"	"	"	05/15/02	EPA 7421	

GD-SW-0809-04 (B205134-05) Water Sampled: 05/09/02 16:00 Received: 05/10/02 09:39

Mercury	ND	0.000200	mg/l	1	2050271	05/15/02	05/15/02	EPA 7470A	
Aluminum	ND	0.500	"	"	2050233	05/13/02	05/16/02	EPA 6010B	
Antimony	ND	0.100	"	"	"	"	"	"	
Arsenic	ND	0.0500	"	"	"	"	"	"	
Barium	ND	0.500	"	"	"	"	"	"	
Beryllium	ND	0.0100	"	"	"	"	"	"	
Cadmium	ND	0.00500	"	"	"	"	"	"	
Calcium	39.2	5.50	"	11	"	"	"	"	
Chromium	0.0104	0.0100	"	1	"	"	"	"	
Cobalt	ND	0.0500	"	"	"	"	"	"	
Copper	ND	0.0500	"	"	"	"	"	"	
Iron	0.323	0.100	"	"	"	"	"	"	
Magnesium	108	5.50	"	11	"	"	"	"	
Manganese	0.0788	0.0500	"	1	"	"	"	"	
Nickel	ND	0.0500	"	"	"	"	"	"	
Potassium	135	5.50	"	11	"	"	"	"	
Selenium	ND	0.0500	"	1	"	"	"	"	

Great Lakes Analytical

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11 Jun 02

Andy Johnson, Project Manager



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Terra Tech EM] - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Total Metals by EPA 6000/7000 Series Methods
Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0809-04 (B205134-05) Water Sampled: 05/09/02 16:00 Received: 05/10/02 09:39									
Silver	ND	0.0500	mg/l	1	2050233	05/13/02	05/16/02	EPA 6010B	
Sodium	788	25.5	"	51	"	"	"	"	QC
Thallium	ND	0.100	"	1	"	"	"	"	
Vanadium	ND	0.0450	"	"	"	"	"	"	
Zinc	ND	0.500	"	"	"	"	"	"	
Lead	ND	0.00500	"	"	"	"	05/15/02	EPA 7421	

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0203-01 (B205134-01) Water Sampled: 05/09/02 14:40 Received: 05/10/02 09:39									QC
Acetone	ND u3	10.0	ug/l	1	2050228	05/13/02	05/13/02	5030B 8260B	
Benzene	ND	2.00	"	"	"	"	"	"	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND u3	2.00	"	"	"	"	"	"	
2-Butanone	ND u3	10.0	"	"	"	"	"	"	
Carbon disulfide	ND u3	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND u3	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chlorodibromomethane	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND u3	2.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND u3	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
1,3-Dichloropropene (cis + trans)	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
2-Hexanone	ND u3	10.0	"	"	"	"	"	"	
Methylene chloride	ND u3	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND u3	10.0	"	"	"	"	"	"	
Styrene	ND	2.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
Tetrachloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.00	"	"	"	"	"	"	
Vinyl acetate	ND u3	2.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Total Xylenes	ND	4.00	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		101 %	87.3-118	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		91.0 %	85.2-121	"	"	"	"	"	
Surrogate: Toluene-d8		100 %	92.3-110	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.0 %	82.2-110	"	"	"	"	"	

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10 Jun 02

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL. 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0203-01D (B205134-02) Water Sampled: 05/09/02 13:40 Received: 05/10/02 09:39 QC									
Acetone	ND <u>u3</u>	10.0	ug/l	1	2050228	05/13/02	05/13/02	5030B 8260B	
Benzene	ND	2.00	"	"	"	"	"	"	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
2-Butanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Carbon disulfide	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chlorodibromomethane	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
1,3-Dichloropropene (cis + trans)	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
2-Hexanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Methylene chloride	ND <u>u3</u>	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Styrene	ND	2.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.00	"	"	"	"	"	"	
Vinyl acetate	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Total Xylenes	ND	4.00	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		105 %	87.3-118	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		90.0 %	85.2-121	"	"	"	"	"	
Surrogate: Toluene-d8		99.2 %	92.3-110	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	82.2-110	"	"	"	"	"	

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10 Jun 02

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0405-02 (B205134-03) Water Sampled: 05/09/02 15:05 Received: 05/10/02 09:39									QC
Acetone	ND <u>u3</u>	10.0	ug/l	1	2050228	05-13-02	05-13-02	5030B-8260B	
Benzene	ND	2.00	"	"	"	"	"	"	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
2-Butanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Carbon disulfide	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chlorodibromomethane	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
1,3-Dichloropropene (cis + trans)	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
2-Hexanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Methylene chloride	ND <u>u3</u>	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Styrene	ND	2.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
Tetrachloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.00	"	"	"	"	"	"	
Vinyl acetate	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Total Xylenes	ND	4.00	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		106 %	87.3-118	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		89.2 %	85.2-121	"	"	"	"	"	
Surrogate: Toluene-d8		101 %	92.3-110	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.4 %	82.2-110	"	"	"	"	"	

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18 Jun 02

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL. 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-1213-03 (B205134-04) Water Sampled: 05/09/02 15:30 Received: 05/10/02 09:39									QC
Acetone	ND <u>u3</u>	10.0	ug/l	1	2050228	05/13/02	05/13/02	5030B 8260B	
Benzene	ND	2.00	"	"	"	"	"	"	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
2-Butanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Carbon disulfide	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chlorodibromomethane	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND <u>u3</u>	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
1,3-Dichloropropane (cis + trans)	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
2-Hexanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Methylene chloride	ND <u>u3</u>	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Styrene	ND	2.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
trichloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.00	"	"	"	"	"	"	
Vinyl acetate	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Total Xylenes	ND	4.00	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		106 %	87.3-118	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		88.2 %	85.2-121	"	"	"	"	"	
Surrogate: Toluene-d8		97.0 %	92.3-110	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %	82.2-110	"	"	"	"	"	

HUE
10 Jun 02

Great Lakes Analytical

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andy Johnson

Andy Johnson, Project Manager



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Tetra Tech EM1 - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0809-04 (B205134-05) Water Sampled: 05/09/02 16:00 Received: 05/10/02 09:39 QC									
Acetone	ND <i>WJ</i>	10.0	ug/l	1	2050228	05-13-02	05-13-02	5030B 8260B	
Benzene	ND	2.00	"	"	"	"	"	"	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
2-Butanone	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
Carbon disulfide	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Chlorobenzene	ND	2.00	"	"	"	"	"	"	
Chlorodibromomethane	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
1,3-Dichloropropene (cis + trans)	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
2-Hexanone	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
Methylene chloride	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
Styrene	ND	2.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
Tetrachloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.00	"	"	"	"	"	"	
Vinyl acetate	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Total Xylenes	ND	4.00	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		107 %	87.3-118	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		89.4 %	85.2-121	"	"	"	"	"	
Surrogate: Toluene-d8		96.2 %	92.3-110	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	82.2-110	"	"	"	"	"	

HUG
4230
19 Jun 02

Great Lakes Analytical

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Andy Johnson

Andy Johnson, Project Manager

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Buffalo Grove, Illinois 60089Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa GraczykReported:
05/21/02 08:54

Volatile Organic Compounds by EPA Method 8260B

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trip Blank - TBI/TB2 (B205134-06) Water Sampled: 05/09/02 00:00 Received: 05/10/02 09:39 QC									
Acetone	ND <i>WJ</i>	10.0	ug/l	1	2050228	05-13-02	05-13-02	5030B 8260B	
Benzene	ND	2.00	"	"	"	"	"	"	
Bromodichloromethane	ND	2.00	"	"	"	"	"	"	
Bromoform	ND	2.00	"	"	"	"	"	"	
Bromomethane	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
2-Butanone	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
Carbon disulfide	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Carbon tetrachloride	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
o-Toluenzene	ND	2.00	"	"	"	"	"	"	
p-Tolodibromomethane	ND	2.00	"	"	"	"	"	"	
Chloroethane	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Chloroform	ND	2.00	"	"	"	"	"	"	
Chloromethane	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.00	"	"	"	"	"	"	
1,3-Dichloropropene (cis + trans)	ND	2.00	"	"	"	"	"	"	
Ethylbenzene	ND	2.00	"	"	"	"	"	"	
2-Hexanone	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
Methylene chloride	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
Styrene	ND	2.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.00	"	"	"	"	"	"	
o-Tachloroethene	ND	2.00	"	"	"	"	"	"	
Toluene	ND	2.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.00	"	"	"	"	"	"	
Trichloroethene	ND	2.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.00	"	"	"	"	"	"	
Vinyl acetate	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Vinyl chloride	ND	2.00	"	"	"	"	"	"	
Total Xylenes	ND	4.00	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		101 %	87.3-118	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		94.0 %	85.2-121	"	"	"	"	"	
Surrogate: Toluene-d8		98.2 %	92.3-110	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.4 %	82.2-110	"	"	"	"	"	

Great Lakes Analytical

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Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Polychlorinated Biphenyls by EPA Method 8082

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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GD-SW-0203-01 (B205134-01) Water Sampled: 05/09/02 14:40 Received: 05/10/02 09:39

PCB-1016	ND	0.500	ug/l	1	2050263	05/14/02	05/17/02	EPA 8082	
PCB-1221	ND	0.500	"	"	"	"	"	"	
PCB-1232	ND	0.500	"	"	"	"	"	"	
PCB-1242	ND	0.500	"	"	"	"	"	"	
PCB-1248	ND	0.500	"	"	"	"	"	"	
PCB-1254	ND	0.500	"	"	"	"	"	"	
PCB-1260	ND	0.500	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

47.1 % 10-110

Surrogate: Decachlorobiphenyl

28.4 % 10-114

GD-SW-0203-01D (B205134-02) Water Sampled: 05/09/02 13:40 Received: 05/10/02 09:39

PCB-1016	ND	0.500	ug/l	1	2050263	05/14/02	05/17/02	EPA 8082	
PCB-1221	ND	0.500	"	"	"	"	"	"	
PCB-1232	ND	0.500	"	"	"	"	"	"	
PCB-1242	ND	0.500	"	"	"	"	"	"	
PCB-1248	ND	0.500	"	"	"	"	"	"	
PCB-1254	ND	0.500	"	"	"	"	"	"	
PCB-1260	ND	0.500	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

44.3 % 10-110

Surrogate: Decachlorobiphenyl

20.3 % 10-114

GD-SW-0405-02 (B205134-03) Water Sampled: 05/09/02 15:05 Received: 05/10/02 09:39

PCB-1016	ND	0.500	ug/l	1	2050263	05/14/02	05/17/02	EPA 8082	
PCB-1221	ND	0.500	"	"	"	"	"	"	
PCB-1232	ND	0.500	"	"	"	"	"	"	
PCB-1242	ND	0.500	"	"	"	"	"	"	
PCB-1248	ND	0.500	"	"	"	"	"	"	
PCB-1254	ND	0.500	"	"	"	"	"	"	
PCB-1260	ND	0.500	"	"	"	"	"	"	

Surrogate: Tetrachloro-meta-xylene

39.4 % 10-110

Surrogate: Decachlorobiphenyl

44.5 % 10-114

Great Lakes Analytical

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Andy Johnson, Project Manager



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200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Polychlorinated Biphenyls by EPA Method 8082

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-1213-03 (B205134-04) Water Sampled: 05/09/02 15:30 Received: 05/10/02 09:39									
PCB-1016	ND	0.500	ug/l	1	2050263	05/14/02	05/17/02	EPA 8082	
PCB-1221	ND	0.500	"	"	"	"	"	"	
PCB-1232	ND	0.500	"	"	"	"	"	"	
PCB-1242	ND	0.500	"	"	"	"	"	"	
PCB-1248	ND	0.500	"	"	"	"	"	"	
PCB-1254	ND	0.500	"	"	"	"	"	"	
PCB-1260	ND	0.500	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		33.4 %	10-110	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		27.8 %	10-114	"	"	"	"	"	
GD-SW-0809-04 (B205134-05) Water Sampled: 05/09/02 16:00 Received: 05/10/02 09:39									
PCB-1016	ND	0.500	ug/l	1	2050263	05/14/02	05/17/02	EPA 8082	
PCB-1221	ND	0.500	"	"	"	"	"	"	
PCB-1232	ND	0.500	"	"	"	"	"	"	
PCB-1242	ND	0.500	"	"	"	"	"	"	
PCB-1248	ND	0.500	"	"	"	"	"	"	
PCB-1254	ND	0.500	"	"	"	"	"	"	
PCB-1260	ND	0.500	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		43.3 %	10-110	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		49.6 %	10-114	"	"	"	"	"	

Great Lakes Analytical

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200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0203-01 (B205134-01) Water Sampled: 05/09/02 14:40 Received: 05/10/02 09:39 QC									
Acenaphthene	ND	2.00	ug/l	1	2050219	05-13-02	05-17-02	EPA 8270C	
Acenaphthylene	ND	2.00	"	"	"	"	"	"	
Aniline	ND	2.00	"	"	"	"	"	"	
Anthracene	ND	2.00	"	"	"	"	"	"	
Benzoic acid	ND	10.0	"	"	"	"	"	"	
Benz (a) anthracene	ND	2.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	2.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	2.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	2.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	2.00	"	"	"	"	"	"	
Benzyl alcohol	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	2.00	"	"	"	"	"	"	
4-Chloroaniline	ND	2.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	2.00	"	"	"	"	"	"	
2-Chloronaphthalene	ND	2.00	"	"	"	"	"	"	
2-Chlorophenol	ND	2.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Chrysene	ND	2.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Dibenzofuran	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	10.0	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	2.00	"	"	"	"	"	"	
Diethyl phthalate	ND	2.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	2.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	2.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	10.0	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	2.00	"	"	"	"	"	"	
Fluorene	ND	2.00	"	"	"	"	"	"	
Hexachlorobenzene	ND	2.00	"	"	"	"	"	"	

Great Lakes Analytical

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11 Jun 02

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Andy Johnson, Project Manager

Page 14 of 24



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Tetra Tech EMI - IL
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Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0203-01 (B205134-01) Water Sampled: 05/09/02 14:40 Received: 05/10/02 09:39									QC
Hexachlorobutadiene	ND	2.00	ug/l	1	2050219	05-13-02	05-17-02	EPA 8270C	
Hexachlorocyclopentadiene	ND	2.00	"	"	"	"	"	"	
Hexachloroethane	ND	2.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	2.00	"	"	"	"	"	"	
Isophorone	ND	2.00	"	"	"	"	"	"	
2-Methylnaphthalene	ND	2.00	"	"	"	"	"	"	
o-Cresol	ND	2.00	"	"	"	"	"	"	
m,p-Cresols	ND	2.00	"	"	"	"	"	"	
p-Phthalene	ND	2.00	"	"	"	"	"	"	
Nitroaniline	ND	10.0	"	"	"	"	"	"	
3-Nitroaniline	ND	10.0	"	"	"	"	"	"	
4-Nitroaniline	ND	10.0	"	"	"	"	"	"	
Nitrobenzene	ND	2.00	"	"	"	"	"	"	
2-Nitrophenol	ND	2.00	"	"	"	"	"	"	
4-Nitrophenol	ND	10.0	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	2.00	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	2.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
Phenanthrene	ND	2.00	"	"	"	"	"	"	
Phenol	ND	2.00	"	"	"	"	"	"	
Pyrene	ND	2.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.00	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	10.0	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	2.00	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		%	10-110	"	"	"	"	"	
Surrogate: Phenol-d6		%	10-110	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		%	31.4-110	"	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	0.0599	%	29.1-110	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		%	10-110	"	"	"	"	"	
Surrogate: p-Terphenyl-d14	0.0599	%	10-121	"	"	"	"	"	

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11 Jun 02

Great Lakes Analytical

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Andy Johnson

Andy Johnson, Project Manager

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1380 Busch Parkway
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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0203-01D (B205134-02) Water Sampled: 05/09/02 13:40 Received: 05/10/02 09:39 QC.02									
Acenaphthene	ND	2.00	ug/l	1	2050219	05/13/02	05/17/02	EPA 8270C	
Acenaphthylene	ND	2.00	"	"	"	"	"	"	
Aniline	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Anthracene	ND	2.00	"	"	"	"	"	"	
Benzoic acid	ND <i>u3</i>	10.0	"	"	"	"	"	"	
Benz (a) anthracene	ND	2.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Benzyl alcohol	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	2.00	"	"	"	"	"	"	
4-Chloroaniline	ND	2.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND <i>u3</i>	2.00	"	"	"	"	"	"	
2-Chloronaphthalene	ND	2.00	"	"	"	"	"	"	
2-Chlorophenol	ND <i>u3</i>	2.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Chrysene	ND	2.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Dibenzofuran	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	10.0	"	"	"	"	"	"	
2,4-Dichlorophenol	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Diethyl phthalate	ND	2.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	2.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	10.0	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND <i>u3</i>	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND <i>u3</i>	10.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND <i>u3</i>	2.00	"	"	"	"	"	"	
Fluoranthene	ND	2.00	"	"	"	"	"	"	
Fluorene	ND	2.00	"	"	"	"	"	"	
Hexachlorobenzene	ND	2.00	"	"	"	"	"	"	

Great Lakes Analytical

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11 Jun 02

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Andy Johnson, Project Manager

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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0203-01D (B205134-02) Water Sampled: 05/09/02 13:40 Received: 05/10/02 09:39 QC.O2									
Hexachlorobutadiene	ND	2.00	ug/l	1	2050219	05/13/02	05/17/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	2.00	"	"	"	"	"	"	
Hexachloroethane	ND	2.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND ω	2.00	"	"	"	"	"	"	
Isophorone	ND	2.00	"	"	"	"	"	"	
2-Methylnaphthalene	ND	2.00	"	"	"	"	"	"	
o-Cresol	ND ω	2.00	"	"	"	"	"	"	
m,p-Cresols	ND ω	2.00	"	"	"	"	"	"	
phthalene	ND	2.00	"	"	"	"	"	"	
Nitroaniline	ND	10.0	"	"	"	"	"	"	
3-Nitroaniline	ND	10.0	"	"	"	"	"	"	
4-Nitroaniline	ND	10.0	"	"	"	"	"	"	
Nitrobenzene	ND	2.00	"	"	"	"	"	"	
2-Nitrophenol	ND ω	2.00	"	"	"	"	"	"	
4-Nitrophenol	ND ω	10.0	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	2.00	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	2.00	"	"	"	"	"	"	
Pentachlorophenol	ND ω	10.0	"	"	"	"	"	"	
Phenanthrene	ND	2.00	"	"	"	"	"	"	
Phenol	ND ω	2.00	"	"	"	"	"	"	
Pyrene	ND	2.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.00	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND ω	10.0	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND ω	2.00	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		12.4 %		10-110	"	"	"	"	
Surrogate: Phenol-d6		8.39 %		10-110	"	"	"	"	
Surrogate: Nitrobenzene-d5		41.4 %		31.4-110	"	"	"	"	
Surrogate: 2-Fluorobiphenyl		46.5 %		29.1-110	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		58.9 %		10-110	"	"	"	"	
Surrogate: p-Terphenyl-d14		84.5 %		10-121	"	"	"	"	

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Great Lakes Analytical

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Andy Johnson

Andy Johnson, Project Manager

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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0405-02 (B205134-03) Water Sampled: 05/09/02 15:05 Received: 05/10/02 09:39 QC									
Acenaphthene	ND	2.00	ug/l	1	2050219	05/13/02	05/17/02	EPA 8270C	
Acenaphthylene	ND	2.00	"	"	"	"	"	"	
Aniline	ND 43	2.00	"	"	"	"	"	"	
Anthracene	ND	2.00	"	"	"	"	"	"	
Benzoic acid	ND 43	10.0	"	"	"	"	"	"	
Benz (a) anthracene	ND	2.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	2.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	2.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	2.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	2.00	"	"	"	"	"	"	
Benzyl alcohol	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	2.00	"	"	"	"	"	"	
4-Chloroaniline	ND	2.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND 43	2.00	"	"	"	"	"	"	
2-Chloronaphthalene	ND	2.00	"	"	"	"	"	"	
2-Chlorophenol	ND 43	2.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Chrysene	ND	2.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Dibenzofuran	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	10.0	"	"	"	"	"	"	
2,4-Dichlorophenol	ND 43	2.00	"	"	"	"	"	"	
Diethyl phthalate	ND	2.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND 43	2.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	2.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	10.0	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND 43	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND 43	10.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	2.00	"	"	"	"	"	"	
Fluorene	ND	2.00	"	"	"	"	"	"	
Hexachlorobenzene	ND	2.00	"	"	"	"	"	"	

Great Lakes Analytical

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11 Jun 02

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Andy Johnson

Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0405-02 (B205134-03) Water Sampled: 05/09/02 15:05 Received: 05/10/02 09:39									QC
Hexachlorobutadiene	ND	2.00	ug/l	1	2050219	05/13/02	05/17/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	2.00	"	"	"	"	"	"	
Hexachloroethane	ND	2.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	2.00	"	"	"	"	"	"	
Isophorone	ND	2.00	"	"	"	"	"	"	
2-Methylnaphthalene	ND	2.00	"	"	"	"	"	"	
o-Cresol	ND	2.00	"	"	"	"	"	"	
m,p-Cresols	ND	2.00	"	"	"	"	"	"	
Phthalene	ND	2.00	"	"	"	"	"	"	
Nitroaniline	ND	10.0	"	"	"	"	"	"	
3-Nitroaniline	ND	10.0	"	"	"	"	"	"	
4-Nitroaniline	ND	10.0	"	"	"	"	"	"	
Nitrobenzene	ND	2.00	"	"	"	"	"	"	
2-Nitrophenol	ND	2.00	"	"	"	"	"	"	
4-Nitrophenol	ND	10.0	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	2.00	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	2.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
Phenanthrene	ND	2.00	"	"	"	"	"	"	
Phenol	ND	2.00	"	"	"	"	"	"	
Pyrene	ND	2.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.00	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	10.0	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	2.00	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		7.82 %	10-110		"	"	"	"	
Surrogate: Phenol-d6		5.18 %	10-110		"	"	"	"	
Surrogate: Nitrobenzene-d5		31.8 %	31.4-110		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		31.7 %	29.1-110		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		39.5 %	10-110		"	"	"	"	
Surrogate: p-Terphenyl-d14		47.6 %	10-121		"	"	"	"	

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Great Lakes Analytical

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Andy Johnson

Andy Johnson, Project Manager



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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-1213-03 (B205134-04) Water Sampled: 05/09/02 15:30 Received: 05/10/02 09:39									QC.02
Acenaphthene	ND	2.00	ug/l	1	2050219	05/13/02	05/17/02	EPA 8270C	
Acenaphthylene	ND	2.00	"	"	"	"	"	"	
Aniline	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Anthracene	ND	2.00	"	"	"	"	"	"	
Benzoic acid	ND <u>u3</u>	10.0	"	"	"	"	"	"	
Benz (a) anthracene	ND	2.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Benzyl alcohol	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	2.00	"	"	"	"	"	"	
4-Chloroaniline	ND	2.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND <u>u3</u>	2.00	"	"	"	"	"	"	
2-Chloronaphthalene	ND	2.00	"	"	"	"	"	"	
2-Chlorophenol	ND <u>u3</u>	2.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Chrysene	ND	2.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Dibenzofuran	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	10.0	"	"	"	"	"	"	
2,4-Dichlorophenol	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Diethyl phthalate	ND	2.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	2.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	10.0	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND <u>u3</u>	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND <u>u3</u>	10.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND <u>u3</u>	2.00	"	"	"	"	"	"	
Fluoranthene	ND	2.00	"	"	"	"	"	"	
Fluorene	ND	2.00	"	"	"	"	"	"	
Hexachlorobenzene	ND	2.00	"	"	"	"	"	"	

Great Lakes Analytical

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11 Jun 02

Andy Johnson, Project Manager

Page 20 of 24



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Buffalo Grove, Illinois 60089

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Page 115
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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-1213-03 (B205134-04) Water Sampled: 05/09/02 15:30 Received: 05/10/02 09:39 QC.02									
Hexachlorobutadiene	ND	2.00	ug/l	1	2050219	05/13/02	05/17/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	2.00	"	"	"	"	"	"	
Hexachloroethane	ND	2.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Isophorone	ND	2.00	"	"	"	"	"	"	
2-Methylnaphthalene	ND	2.00	"	"	"	"	"	"	
o-Cresol	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
m,p-Cresols	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
naphthalene	ND	2.00	"	"	"	"	"	"	
Nitroaniline	ND	10.0	"	"	"	"	"	"	
3-Nitroaniline	ND	10.0	"	"	"	"	"	"	
4-Nitroaniline	ND	10.0	"	"	"	"	"	"	
Nitrobenzene	ND	2.00	"	"	"	"	"	"	
2-Nitrophenol	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
4-Nitrophenol	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	2.00	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	2.00	"	"	"	"	"	"	
Pentachlorophenol	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
Phenanthrene	ND	2.00	"	"	"	"	"	"	
Phenol	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Pyrene	ND	2.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.00	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND <i>WJ</i>	10.0	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND <i>WJ</i>	2.00	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol		9.65 %	10-110	"	"	"	"	"	
Surrogate: Phenol-d6		6.49 %	10-110	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		40.2 %	31.4-110	"	"	"	"	"	
Surrogate: 2-Fluorobiphenyl		36.2 %	29.1-110	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		47.7 %	10-110	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		48.4 %	10-121	"	"	"	"	"	

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11 Jun 02

Great Lakes Analytical

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Andy Johnson, Project Manager

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1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0809-04 (B205134-05) Water Sampled: 05/09/02 16:00 Received: 05/10/02 09:39 QC,02									
Acenaphthene	ND	2.00	ug/l	1	2050219	05/13/02	05/17/02	EPA 8270C	
Acenaphthylene	ND	2.00	"	"	"	"	"	"	
Aniline	ND	2.00	"	"	"	"	"	"	
Anthracene	ND	2.00	"	"	"	"	"	"	
Benzoic acid	ND	10.0	"	"	"	"	"	"	
Benz (a) anthracene	ND	2.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	2.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	2.00	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	2.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	2.00	"	"	"	"	"	"	
Benzyl alcohol	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	2.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	2.00	"	"	"	"	"	"	
4-Chloroaniline	ND	2.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	2.00	"	"	"	"	"	"	
2-Chloronaphthalene	ND	2.00	"	"	"	"	"	"	
2-Chlorophenol	ND	2.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	2.00	"	"	"	"	"	"	
Chrysene	ND	2.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	2.00	"	"	"	"	"	"	
Dibenzofuran	ND	2.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	10.0	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	2.00	"	"	"	"	"	"	
Diethyl phthalate	ND	2.00	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	2.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	2.00	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	10.0	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	2.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	2.00	"	"	"	"	"	"	
Fluorene	ND	2.00	"	"	"	"	"	"	
Hexachlorobenzene	ND	2.00	"	"	"	"	"	"	

Great Lakes Analytical

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11 Jun 02

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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Semivolatile Organic Compounds by EPA Method 8270C

Great Lakes Analytical

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GD-SW-0809-04 (B205134-05) Water Sampled: 05/09/02 16:00 Received: 05/10/02 09:39 QC,02									
Hexachlorobutadiene	ND	2.00	ug/l	1	2050219	05/13/02	05/17/02	EPA 8270C	
Hexachlorocyclopentadiene	ND	2.00	"	"	"	"	"	"	
Hexachloroethane	ND	2.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	2.00	"	"	"	"	"	"	
Isophorone	ND	2.00	"	"	"	"	"	"	
2-Methylnaphthalene	ND	2.00	"	"	"	"	"	"	
o-Cresol	ND	2.00	"	"	"	"	"	"	
m,p-Cresols	ND	2.00	"	"	"	"	"	"	
phthalene	ND	2.00	"	"	"	"	"	"	
2-Nitroaniline	ND	10.0	"	"	"	"	"	"	
3-Nitroaniline	ND	10.0	"	"	"	"	"	"	
4-Nitroaniline	ND	10.0	"	"	"	"	"	"	
Nitrobenzene	ND	2.00	"	"	"	"	"	"	
2-Nitrophenol	ND	2.00	"	"	"	"	"	"	
4-Nitrophenol	ND	10.0	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	2.00	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	2.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
Phenanthrene	ND	2.00	"	"	"	"	"	"	
Phenol	ND	2.00	"	"	"	"	"	"	
Pyrene	ND	2.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.00	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	10.0	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	2.00	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol	9.35 %	10-110	"	"	"	"	"	"	
Surrogate: Phenol-d6	6.85 %	10-110	"	"	"	"	"	"	
Surrogate: Nitrobenzene-d5	44.2 %	31.4-110	"	"	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	40.2 %	29.1-110	"	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol	56.8 %	10-110	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14	70.8 %	10-121	"	"	"	"	"	"	

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11 Jun 02

Great Lakes Analytical

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Tetra Tech EMI - IL
200 E. Randolph Suite 4700
Chicago IL, 60601

Project: Gary Development Landfill
Project Number: N/A
Project Manager: Lisa Graczyk

Reported:
05/21/02 08:54

Notes and Definitions

- O2 One or more internal standard recoveries were below the method specified acceptance criteria.
- QC The result for one or more quality control measurements associated with this sample did not meet the laboratory and/or source method acceptance criteria.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Great Lakes Analytical

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Andy Johnson, Project Manager

APPENDIX C
REMOVAL COST PROJECTIONS

HAS BEEN REDACTED
(5 PAGES)

APPENDIX D
LIST OF WITNESSES
(One Page)



LIST OF WITNESSES

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